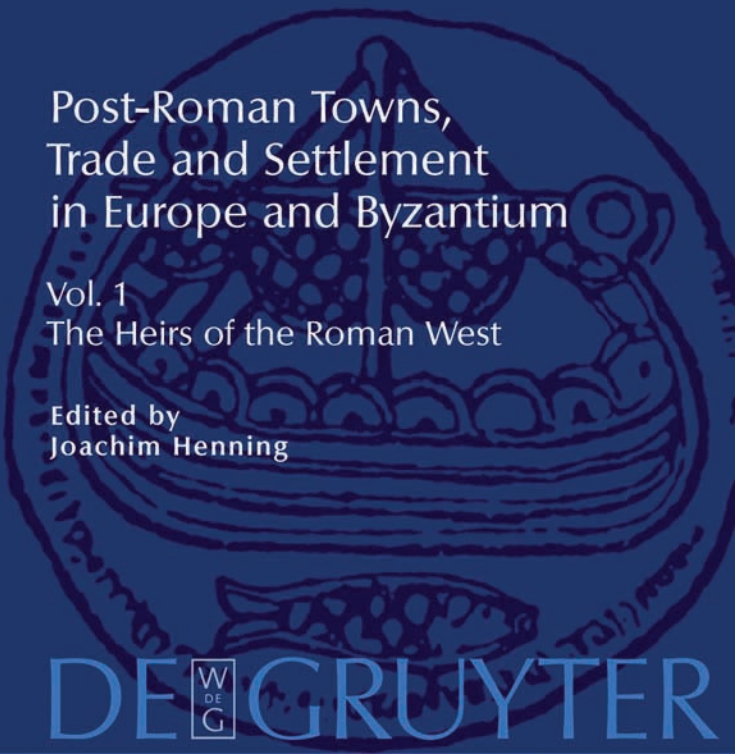
Millennium-Studien

Millennium Studies

Post-Roman Towns, Trade and Settlement in Europe and Byzantium

Vol. 1
The Heirs of the Roman West

Edited by
Joachim Henning



DE GRUYTER

Post-Roman Towns,
Trade and Settlement in Europe and Byzantium

Vol. 1

Millennium-Studien

zu Kultur und Geschichte des ersten Jahrtausends n. Chr.

Millennium Studies

in the culture and history of the first millennium C.E.

Herausgegeben von / Edited by
Wolfram Brandes, Alexander Demandt, Helmut Krasser,
Hartmut Leppin, Peter von Möllendorff

Volume 5/1

Walter de Gruyter · Berlin · New York

Post-Roman Towns, Trade and Settlement in Europe and Byzantium

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∞ Printed on acid-free paper which falls within the guidelines of the ANSI
to ensure permanence and durability.

ISBN 978-3-11-018356-6
ISSN 1862-1139

Library of Congress Cataloging-in-Publication Data

A CIP catalogue record for this book is available from the Library of Congress.

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie;
detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

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Printed in Germany

Cover design: Christopher Schneider, Berlin

Foreword

From local town archaeology to medieval European urban history

This subtitle is the motto of a fruitful archaeological cooperation between the Town Council of Bad Homburg vor der Höhe and the Johann Wolfgang Goethe University of Frankfurt am Main that started in the year 2000 with urban excavations and research in Bad Homburg. This work recently culminated in the organization of an international conference on "Post-Roman Towns and Trade in Europe, Byzantium and the Near-East: New methods of structural, comparative and scientific analysis in archaeology", which was held from Tuesday, November 30 to Sunday, October 3, 2004 in the Kur- und Kongresshaus of Bad Homburg (Fig. 1). 38 papers were presented by an international scholarly community from three continents: from Austria (2), Bulgaria (4), Czech Republic (2), France (3), Germany (12), Greece (1), Israel (1), Italy (3), Norway (1), Poland (1), Serbia (1), Spain (1), The Netherlands (1), UK (2) and USA (2). The studies presented in Bad Homburg which dealt with western and central Europe were included in this first volume of papers dedicated to "The Heirs of the Roman West". Two papers from the Pliska conference in Ebernburg (see volume 2) have been incorporated into this volume on the grounds that their subject matter is more compatible. Most papers covering eastern Europe, to Byzantium and to the Near East are to be found in the second volume. The résumés of the Bad Homburg papers were published ahead of the conference.[1]

Driven by broad public interest, and after the signing of a joint agreement between the University of Frankfurt and Bad Homburg Town Council on cooperation in the promotion of research on the history of the medieval town of Homburg, the Town Council provided a substantial initial budget to instigate archaeological and interdisciplinary efforts to research into the earliest roots of the development of settlement in the town. Earlier there had been intense public discussions of what was assumed to be first mention of historical urban occupation: this referred to a place called Dietigheim which in the late medieval period lay close to but outside the town fortifications, and was traditionally related to a *villa Tidenheim* referred to in a charter (deed of donation) of the Carolingian abbey of Lorsch dating to March 20, 782 AD.[2] The question arose as to whether this was sufficient evidence for dating the origins of settlement in the town.

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1 Henning 2004.

2 Cod. Laur. No. 3405.

Fig. 1. Participants at the international Bad Homburg conference

Furthermore, doubts were expressed about the localization of the Carolingian village in the existing old town quarter of Dietigheim, since not a single early medieval find had come to light during many decades of modern construction activity, and despite bustling local archaeological research and observation work from the early nineteenth century, above all by Louis and Heinrich Jacobi, citizens of the town and famous for their work at the Roman fort at the Saalburg camp in the immediate vicinity of Bad Homburg.

A series of trial trenches were dug in key areas of the medieval town, such as in Dietigheim near the "Untergasse" (2002), in the presumed suburb of the medieval castle on the elevated spur at the "Schulberg" (2003), and finally in the inner courtyard of the medieval castle near the keep (2005-2006) (Fig. 2). These excavations were complemented by systematic drilling of cores and soil sampling, large-scale geomagnetic and ground-penetrating radar prospecting, sediment floating, analysis of wood remains, dendrochronological dating of elements from timber houses in the medieval town, as well as the analysis of botanical macroremains, pollen analysis, micromorphological and chemical sampling and investigation of soil samples, ceramic studies, radiocarbon dating and the analysis of the written evidence. The results and a detailed description of these interdisciplinary investigations were documented in two internal research reports.[3]

3 Henning (u. Mitarb.) 2003; *ibid*. 2006.

Fig. 2. Archaeological trial trench in the courtyard of Bad Homburg Castle

A monograph is in preparation.[4] Information for a broader public has also been published.[5] Thanks to this extremely broad archaeological and scientific spectrum of applied methods the consequences for the early town history are now quite clear:

The wetland area in the old town quarter called Dietigheim (Pl. 1) was first occupied from the middle Bronze Age to about the pre-Roman Iron Age. No occupation can be attested for the Roman period or the early Middle Ages. Radiocarbon dating attests a new period of occupation starting in the thirteenth/fourteenth centuries, that continues to the present day. An early medieval occupation phase can also be excluded on the elevated spur were the stone castle was built. Here, however, it was possible to identify eleventh century occupation activity consisting of timber post buildings and sunken features. After a fire a more solid half-timbered building was constructed already in the late eleventh century, or shortly thereafter. Although it is a matter of speculation, these eleventh century activities can probably be related to a nobleman named Wortwin von Hohenberch known from contemporary written sources. If this is correct, it must be assumed that the first aristocratic settlement, probably involving the construction

4 This publication is to be published in the series „Studien zur Archäologie Europas“ Verlag Rudolf Habelt GmbH, Bonn.

5 Henning 2006a; *ibid*. 2006b.

of a light wooden keep, to be dated to this period. However, this activity on the spur certainly was not of a proto-urban character, but related to settlement by a rural nobility. Not until AD 1330 does written evidence testify to an urban character for the site. Bad Homburg was anything but an early flourishing European town. In the shadow of the castle it was a typical late developer, which probably always suffered from problematic relations with the local power structures that were always present nearby. The Carolingian village of *Tiedenheim* has to be looked for elsewhere, and not in the area of the old town of Bad Homburg. It cannot be excluded that inhabitants of the earlier village were resettled to the direct vicinity of the later town in the thirteenth/fourteenth centuries, and that they brought the village name with them. The results of this research, the complexity of which is the direct result of the support offered by the Town Council, were presented at the conference in two public lectures.

We are grateful for the patronage of the Minister of State Udo Corts (Ministry of Science and Cultural Affairs of Hessia) and Prof. Dr. Rudolf Steinberg, President of the Johann Wolfgang Goethe University of Frankfurt am Main. In 2007 two prominent scholars who had participated at the Bad Homburg conference passed away, and we sadly remember Riccardo Francovich (Siena) and Yizhar Hirschberg (Jerusalem), outstanding researchers and friends.

We wish to thank all those who made the Bad Homburg town research program the success it was, and the international conference possible. Together both events successfully built a memorable bridge between local archaeology and central questions of Europe's history.

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Acknowledgements

The editor wishes to express his gratitude first and foremost, and in equal measure, to the citizens and to the Town Council of Bad Homburg v. d. H. They all took an extraordinarily great interest in the urban excavations and scientific research activities by Frankfurt University, as well as in the international congress which was held in the town. The Town Council, private persons and enterprises located in the town offered support in many ways in order to secure the necessary funding. We are no less grateful for the countless kinds of technical help the town provided. It was above all, however, the unflagging enterprise and support of Michael Korwisi, then alderman of the Town Council and until recently Deputy Mayor of Bad Homburg, which made this successful cooperation between town and university possible. We are also indebted to Rüdiger Kurth, long-standing secondary-school history teacher and organizer of the archaeology project group at the Kaiserin-Friedrich Gymnasium, Bad Homburg, not only for having developed the initial idea of organizing excavations in the town, but also for his restless supporting for the editor's subsequent proposition that a congress be organized. Furthermore I wish to thank the following persons for their support and help on the part of the town: Guntram Bay and Jasmin Heuckeroth for their organizational assistance; Dr. Astrid Krüger, director of the municipal archive, for competent advice on the written evidence concerning the town's early history and for giving the evening public lecture at the congress jointly with the editor;[1] Prof. Dr. Barbara Dölemeyer (Max Planck Institute of European History of Law), chairperson of the Historical Society of Bad Homburg; and last but not least Dr. Ursula Jungherr, Mayor of Bad Homburg, who kept a careful and strict eye on the use of resources offered by the town. She provided a warm welcome to the participants of the congress at the Saalburg Museum, and together with Prof. Dr. Egon Schallmayer, director of the museum and at the same time head of the Hessian Archaeological Heritage Service, kindly provided an introduction into the activities of his department. During a visit to the Römisch-Germanisches Zentralmuseum in Mainz its director, Priv.-Doz. Dr. Falko Daim, offered a cordial reception to the congress participants.

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1 This joint paper on "Charlemagne or Frederick Barbarossa? The «Bad Homburg Method»: archaeology, scientific methods and medieval studies on the origins of Bad Homburg" is to be included in an enlarged and revised form in the monographic publication of the Bad Homburg research project prepared by the editor (see foreword, footnote 4).

The following enterprises kindly helped in funding the congress: Stadtwerke Bad Homburg, DC Immobilien Projekt Bad-Homburg GmbH, Spielbank Bad Homburg, Boyden global executive search and Naspa-Stiftung „Initiative und Leistung" (a foundation of the Nassauische Sparkasse). We owe our sincere thanks to Jürgen Banzer, Head of the Hochtaunus District Authority, for supporting the practical organization of the congress.

Furthermore we are extremely grateful to Karl Weber, director of the State Administration of Hessian Castles and Gardens for permitting excavations in the inner courtyard of Homburg Castle, and for his general promotion of this important section of the Bad Homburg research program, which was primary funded by private donations (R. Kurth and his archaeology program team).

The cooperation program enjoyed important support from the president of Frankfurt University, Prof. Dr. Rudolf Steinberg, who acted as patron to the conference (jointly with the State Minister of Hessia, Udo Corts) and also invited the participants for a visit to Frankfurt University, which ended with an evening reception in the Frauenlobstrasse guesthouse.

Among the many who helped organize the conference, carry out the excavations, and above all prepare the conference volumes, we are especially grateful to Petra Hanauska M.A., who was involved into nearly all aspects of the Bad Homburg program and deserves a particular mention for supporting the conference organization, coordinating much of the technical editorial activities and for preparing the print layout.

I am also most grateful to my staff members Angela Ehrlich (computer design and digital enhancement), Ralf Gröninger M.A. and Sebastian Huther (field documentation), Eyub F. Eyub M.A. (geophysical prospection), Katja Rösler M.A. (editorial group: print layout) and Thorsten Sonnemann M.A. (conference organization, editorial group: digital enhancement, geophysics), and to Katrin Weimann, Sebastian Huther and many others of my students. I also thank John F. Romano (Cambridge MA), David Toalster (Frankfurt) and Dr. David Wigg-Wolf (Academy of Science and Literature, Mainz) for carrying out the revision of English texts written by non-native speakers. My sincere thanks also go to Dr. Sabine Vogt and her colleagues of the De Gruyter Verlag and to Prof. Dr. Wolfram Brandes, member of the editorial board of the Millennium Studies, for their technical support and the excellent cooperation.

The conference community very much enjoyed the impressive presentation of Frankfurt's dendrocronological program dealing not only with the town of Bad Homburg, but also many other regions of Germany and abroad, provided in a second public lecture at the congress by Dr. Thorsten Westphal, then director of the university's dendrochronological laboratory.[2] I am grateful for the inspiring scientific cooperation within the framework of the Bad Homburg program with Prof. Dr. Heinrich Thiemeyer and Dipl.-Ing. Agr. Oliver Wegener (soil sciences), Dr. Arie Joop Kalis and Dr. Astrid Schweitzer (paleobotany), Richard Macphail (University College London, soil micromorphology), Dr. Angela Kreuz (Hessian Heritage Service, Wiesbaden, paleobotany),

Prof. Dr. Andreas Junge and Christina Salat (geophysics) and the AMS 14C laboratories in Kiel (Prof. Dr. Pieter M. Grootes) and Erlangen (Dipl.-Phys. Andreas Scharf).

Finally I wish to thank all the participants at the conferences in Bad Homburg and Ebernburg who submitted their contributions. I deeply apologize for the fact that they have had to wait longer than expected for the publication to appear. The editor accepts full responsibility for the delay, although some of the difficult circumstances that caused this were neither foreseeable, nor man-made. But in the end it would seem to have turned out well.

Frankfurt am Main, October 2007 Joachim Henning

2 His paper on "Development and spreading of medieval towns in Germany east of the Elbe river based on dendrochronological data" is forthcoming in a collection volume of the Frankfurt graduate school for archaeological-scientific analyses (ed. Jan-Waalke Meyer).

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Contents

Vol. 1 - The Heirs of the Roman West

Foreword V
Acknowledgements IX
Contributors of volume 1 XV

Chapter I. The Franks, Italy and Spain

Early European towns: The way of the economy in the Frankish area between dynamism and deceleration 500-1000 AD 3
Joachim Henning

Where do trading towns come from? Early medieval Venice and the northern *emporia* 41
Michael McCormick

Provenancing Merovingian garnets by PIXE and μ-Raman spectrometry 69
Patrick Périn, Thomas Calligaro, Françoise Vallet, Jean-Paul Poirot & Dominique Bagault

Flourishing places in North-Eastern Italy: towns and *emporia* between late antiquity and the Carolingian age 77
Sauro Gelichi

Rome in the ninth century: the economic system 105
Paolo Delogu

Production and circulation of silver and secondary products (lead and glass) from Frankish royal silver mines at Melle (eighth to tenth century) 123
Florian Tereygeol

The hinterlands of early medieval towns: the transformation of the countryside in Tuscany 135
Riccardo Francovich

Where is the eighth century in the towns of the Meuse valley? 153
Frans Theuws

Towns and rivers, river towns: environmental archaeology and the archaeological evaluation of urban activities and trade 165
Joëlle Burnouf

The royal foundation of *Recópolis* and the urban renewal in Iberia during the second half of the sixth century 181
Lauro Olmo Enciso

Chapter II. Emporia of the North and the Carolingian East

Recent archaeological research in Haithabu 199
Claus von Carnap-Bornheim & Volker Hilberg

Agrarian production and the *emporia* of mid Saxon England, ca. AD 650-850 219
Helena Hamerow

Urbanisation in Northern and Eastern Europe, ca. AD 700-1100 233
Johan Callmer

Urban archaeology in Magdeburg: results and prospects 271
Thomas Weber

Micromorphology and post-Roman town research: the examples of London and Magdeburg 303
Richard I. Macphail, John Crowther & Jill Cruise

Karlburg am Main (Bavaria) and its role as a local centre in the late Merovingian and Ottonian periods 319
Peter Ettel

Some remarks on the topography of *Franconofurd* 341
Egon Wamers

Marburg Castle: the cradle of the province Hesse, from Carolingian to Ottonian times 353
Christa Meiborg

Das karolingerzeitliche Kloster Fulda – ein „*monasterium in solitudine*“. Seine Strukturen und Handwerksproduktion nach den seit 1898 gewonnenen archäologischen Daten 367
Thomas Kind

New findings of the excavations in *Mosaburg*/Zalavár (Western Hungary) 411
Béla Miklós Szőke

Chapter III. Eastern Central Europe

“Tribal” societies and the rise of early medieval trade: archaeological evidence from Polish territories (eighth-tenth centuries) 431
Andrzej Buko

Counted and weighed silver: the fragmentation of coins in early medieval East Central Europe 451
Sebastian Brather

Early medieval centre in Pohansko near Břeclav/Lundeburg: *munitio*, *emporium* or *palatium* of the rulers of Moravia? 473
Jiří Macháček

Ninth-century Mikulčice: the “market of the Moravians”? The archaeological evidence of trade in Great Moravia 499
Lumír Poláček

Ein frühmittelalterliches Grubenhaus von Bielovce (Slowakei): Befund und Rekonstruktion 525
Gabriel Fusek

On “Orient-preference” in archaeological research on the Avars, proto-Bulgarians and conquering Hungarians 545
Csanád Bálint

Picture credits 563

Plates 569

Vol. 2 - Byzantium, Pliska, and the Balkans

Preface V
Acknownledgements IX
Contributors of volume 2 XI

Chapter IV. Byzantium

The reduction of the fortified city area in late antiquity: some reflections on the end of the 'antique city' in the lands of the Eastern Roman Empire 3
Chavdar Kirilov

Amorium in the Byzantine Dark Ages (seventh to ninth centuries) 25
Eric A. Ivison

Durostorum in late antiquity (fourth to seventh centuries) 61
Stefka Angelova & Ivan Buchvarov

Imports, exports and autarky in Byzantine Thessalonike from the seventh to the tenth century 89
Charalambos Bakirtzis

Archäologie und die „Dunklen Jahrhunderte" im byzantinischen Anatolien 119
Philipp Niewöhner

Stadt oder „Stadt": Frühbyzantinische Siedlungsstrukturen im nördlichen Illyricum 159
Mihailo Milinković

Post-Roman Tiberias: between East and West 193
Yizhar Hirschfeld

Chapter V. Pliska – Town and Hinterland

The Metropolis of Pliska or, how large does an early medieval settlement have to be in order to be called a city? 209
Joachim Henning

Pliska in the view of Protobulgarian inscriptions and Byzantine written sources 241
Günter Prinzing

Zur historischen Topographie Pliskas einhundert Jahre nach den ersten Ausgrabungen 253
Janko Dimitrov

Eine Hauptstadt ohne Gräber? Pliska und das heidnische Bulgarenreich an der unteren Donau im Lichte der Grabfunde 273
Uwe Fiedler

Eighth- and ninth-century pottery from the industrial quarter of Pliska, capital of the early medieval Bulgarian kingdom 293
Ljudmila Dončeva-Petkova

The early medieval yellow pottery from Pliska, Bulgaria: the question of its provenance and the problem of its origin 315
Vassilena Petrova

Geophysical prospecting in Pliska (Bulgaria): applied methods and results 341
Norbert Schleifer

Soda-Kalk-Glas des 8. und 9. Jahrhunderts vom Asar-dere in Pliska (Bulgarien) im Vergleich mit frühmittelalterlichem Glas in Westeuropa 351
Karl Hans Wedepohl

Periodisierung und Chronologie der Besiedlung und des Baugeschehens im Gebiet um die Große Basilika von Pliska 361
Pavel Georgiev

Ergänzende Angaben zur frühmittelalterlichen Siedlung auf dem Gebiet der Großen Basilika 373
Radoslav Vasilev

Ein Herrenhof des 10.-11. Jahrhunderts in der Äußeren Stadt von Pliska 383
Stojan Vitljanov

Ein Hortfund mit Eisengegenständen aus Pliska und das Problem der frühmittelalterlichen Agrartechnik in Bulgarien 393
Stojan Vitljanov

Ein früher Haustypus in der Siedlung südöstlich der Inneren Stadt von Pliska 403
Stanislav Stanilov & Janko Dimitrov

A virtual view of Pliska: Integrating remote sensing, geophysical and archaeological survey data into a geographical information system 417
Irene Marzolff & Joachim Henning

Kabiyuk: another Pliska? 425
Joachim Henning & Eyup F. Eyup

Khan Omurtag's stone palace of AD 822: a "modernized" eighth century timber fort 433
Joachim Henning, Todor Balabanov, Peter Milo & Daniel Ziemann

The early medieval boyar courtyard of Strumba near Shumen 441
Joachim Henning & Peter Milo

Chapter VI. Pliska and the Balkans

Der Beginn von Pliska und der bulgarischen Landnahmezeit 449
Rašo Rašev

Zur Siedlungsstruktur der Nordostprovinz des Ersten Bulgarenreiches 463
Vladimir I. Kozlov

Archäologische Zeugnisse frühslawischer Besiedlung in Bulgarien 481
Stefka Angelova & Rumjana Koleva

Die Ausgrabungen in Iatrus und Karasura: Zu einigen Aspekten der Frühmittelalterforschung in Bulgarien 509
Michael Wendel

Ergebnisse und Erfahrungen aus den polnischen Untersuchungen in Stărmen und Odărci 527
Zofia Kurnatowska & Henryk Mamzer

Westliche Einflüsse auf der östlichen Balkanhalbinsel im Spiegel der früh- und hochmittelalterlichen Reitausrüstung 543
Thomas Kind

The rebellion of the nobles against the baptism of Khan Boris (865-866) 613
Daniel Ziemann

Die Ausgrabungen in der Kirche Nr. 2 des Erzbischofsitzes von Drăstăr (1993-1999) 625
Stefka Angelova

Zur ethnischen Zugehörigkeit einiger Nekropolen des 11. Jahrhunderts in Bulgarien 643
Ljudmila Dončeva-Petkova

Catalogue of archaeological finds from Pliska: Introduction / Katalog archäologischer Funde aus Pliska: Einführung 661
Joachim Henning

Katalog (Ljudmila Dončeva-Petkova, Joachim Henning, Vassilena Petrova & Angela Ehrlich) 665

Picture credits 705

Plates 709

Chapter I

The Franks, Italy and Spain

Early European towns. The development of the economy in the Frankish realm between dynamism and deceleration AD 500-1100

Joachim Henning

1. Introduction

With few exceptions current research on early medieval town development in Europe holds a consistent view of the decisive social forces that are thought to have stimulated progress in this field of the post-Roman economy.[1] According to this there was a "nadir of urban life"[2] in the Merovingian period as a result of the weakness of aristocratic power from the late fifth to seventh centuries. In particular, this weakness is supposed to have prevented the creation of strict rural organizational structures such as the bipartite manorial complexes of the big Carolingian abbeys and on fiscal land. These had then been established by the eighth century and are thought finally to have led to higher productivity on the part of peasant households. "L'essor urbaine"[3], the "rebirth of towns"[4] and "new urban beginnings"[5] were consequently attributed to the rising political power of the Carolingian dynasty, to the progress assumed to have resulted from the invention of the *curtis* system in the Frankish heartlands,[6] and to the rising aristocracies in neighboring regions that were eager to adopt Frankish upper class life style. Thus wics

1 The state of the research in this field was discussed at the graduate seminar at Harvard University in Cambridge/MA „The Archaeology and History of European Towns AD 500-1000", which I had the pleasure to organize jointly with Mike McCormick in the fall semester 2005-2006. The liveliest debates during the seminar inspired me to compile this review of archaeological data on post-Roman craft production on the Continent. I was encouraged to include it in this collection of papers instead of the usual editor's introduction reviewing the contributions. However, there was not enough space within the framework of this essay for a complete bibliography of the extensive archaeological data. This shall be rectified in a more detailed study which is in preparation.

2 Verhulst 1999, 24.

3 Despy 1996, 353.

4 Hodges/Hobley 1988.

5 Verhulst 1999, 44.

6 Lebecq 1996, 300-310; Toubert 1990.

and *emporia* on both sides of the Channel, and in Scandinavia, have been interpreted as royal or aristocratic creations, ports of trade for luxury goods and "monopolistic centers" that in principle were not so very different from the contemporary settlements of the "planned monastic city" type as exemplified by the famous ninth century plan of St Gall depicting an ideal Benedictine abbey, or by the results of excavation at the abbey of San Vincenzo al Volturno.[7] Furthermore, all these new features are thought to have been closely related to, or to have profited directly or indirectly from, the rise of Carolingian fiscal and monastic manorial structures in the Frankish lands with their organized compulsory labor.

But while a certain consensus seems to exist about the question, the enigma of the decline of some of these apparently short-lived "mushroom-towns"[8] after the age of Charlemagne is the subject of more intensive debate. Since Viking attacks are an inadequate explanation for scholars dealing with successful town development in areas that were under Viking control,[9] it was suggested that these wics and *emporia* suffered from a certain economic incompleteness or immaturity. The assumption, however, that such trading settlements relied exclusively on the long-distance exchange of luxurious goods to the exclusion of exchange with their rural hinterland has been almost completely rejected recently in the light of new results from the mapping of detector coin finds around such sites in England.[10] Moreover, studies of the material culture in coastal areas of Frisia have demonstrated that the inhabitants of many rural and small non-rural settlements not only had access to imported goods, but very probably were even involved in exchange between regions on both sides of the Channel.[11] Thus the estimated number of small wic-like settlements not mentioned in written sources could have been considerably higher than previously assumed. It is hard to imagine, therefore, how the central power could have controlled the many activities involved at the level of such "peasant-merchants". Until recently some Anglo-Saxon rural settlements with imported goods had been connected with "royal manors",[12] but the important studies of Ulmschneider in England and Tys in West Flanders have now forced a comprehensive review of the situation.[13]

Frans Theuws, on the other hand, has argued for a general lack of craft-related activities in continental *emporia* such as Quentovic and Dorestad,[14] which in the long run will have resulted in instability. This view takes a similar line: the assumption that these trading sites had a one-sided economic profile. However, the excavators of nor-

7 Hodges 2004, 144.
8 Dhondt 1962, 181 "villes-champignons".
9 Hall 1989; *idem* 2000, 133; Wallace 1985.
10 Pestell/Ulmschneider 2003; Ulmschneider 2005.
11 Tys 2003.
12 Loveluck 1997.
13 See now: Loveluck/Tys 2006.
14 Theuws 2004, 133.

thern wics will not be happy about this approach since the early medieval trading places they have investigated have delivered large numbers of finds which provide archaeological evidence for industrial activities.[15] Although Quentovic is still unexcavated, and digging at Dorestad focused mainly on the ship landing areas, there are nevertheless finds of antler production waste from both sites attesting to comb production, which is highly significant for the economic characterization of such "proto-urban" sites in both the west and the east.[16] Nine pottery kilns dating from the first half of the ninth century were found near Montreuil-sur-mer in the vicinity of the village of La Calotterie, where Quentovic has recently been located.[17] Furthermore, two iron anvils for specialized sheet metal working were found in Dorestad,[18] and the *emporium* on the coast at Walcheren-Domburg, which was abandoned until the end of the first millennium AD and still awaits extended excavation, has delivered finds that attest to fibula production at the site in the Carolingian period.[19] New excavations on early medieval open trading and production sites on continental rivers, which in some cases also declined in post-Carolingian times or at least were relocated then, have produced considerable evidence of local craft activities.[20] So taking all these observations into account, it seems very unlikely that the decline of some of the wics and *emporia* can be explained by economic defects or abnormalities of some kind related to their supposedly serving only the restricted needs of aristocratic luxury consumption.

Since there is only little written information about the relation of wics and *emporia* to royal power and to church or monastic authority, and what we have is ambiguous, there are good reasons for testing the assumption that it was aristocratic initiation, control and stimulation that led to post-Roman town development by summing up the archaeological data and discussing them anew in the light of the written record. This study therefore will focus mainly on the archaeological evidence for non-alimentary production in the first millennium AD in continental areas north of the Alps, thus including the heartlands of the Frankish empire. We will then have a look at further archaeological data that shed light on the question of what were the decisive productive elements of agricultural production that in the log run might have forced and supported town development, as well as regional and super-regional economic exchange. Last but not least, we must also investigate how far a planned and regular layout can reflect aristocratic foundation and control of such settlements.

15 Grimm/Stylegar 2005; Grimm 2005; Callmer 2002; Hamerow 1999.
16 See Donat 1995.
17 Peytremann 2003, vol. 2, 307 (pottery kilns); Hill 1992; Hill/Worthington/Warburton 1992.
18 Ohlhaver 1939, 126-127.
19 Capelle 1976, 43.
20 Karlburg am Main: Ettel 1998, 75.

2. Craft production in town and countryside

While evidence for exchange and trade must be held to be the decisive factors for characterizing urban economic functions, there can be no doubt that industrial and craft production in general were also important attributes of non-agrarian sites with pivotal functions. However, in the first millennium this type of production is to be found not only in towns or settlements assumed to be proto-towns, but also in rural villages or in other sites in the countryside. This is sufficiently well attested, for example, for the Roman villa estate[21] and the medieval village.[22] However, changing relations in the occurrence, density and quality of professional non-alimentary production in settlements with central functions (economic, political, administrative etc.) on the one hand, and in settlements with predominantly rural functions (villages, manors, villas etc.) on the other hand, can be an important indicator of a progressive or regressive development of the framework in which town development in the economic sense was embedded. It is certainly impossible to demonstrate that a given settlement enjoyed urban functions on the basis of single finds such as a casting mould for fibula production, or a piece of iron slag from a smithy. Moreover, it has been correctly stressed that sometimes archaeology has problems with determining the duration of proven production-related activity.[23] However, the results of a comprehensive comparative analysis of statistically relevant numbers of such finds that reveal the changing relations between different types of settlements should at least be interpreted as a true reflection of tendencies in town development, and thus are worthwhile. Archaeological evidence of extended workshop areas attesting to differentiated and professional craft working activities has to be taken into account all the more when speaking of the urban characteristics of a given settlement.

There has been no systematic analysis to date of the growing amount of archaeological evidence for crafts and manufacturing in the entire area of what was once the Frankish empire. Existing studies are restricted either to selected sites or to single landscapes within the area, and generally do not cover the whole early medieval period, that is the second half of the first millennium AD. This study is a first attempt to bring together archaeological data from the period attesting to industrial activities in an area that stretches from the Rhine estuary in the north to the lake Geneva in the south, and

21 Polfer 1999; Ferdière 2003.

22 Fossier 2000. The earlier assumption of a general non-free status for producers of non-alimentary goods in the western European medieval countryside until the twelfth century (see Lorcin 1984, 7), and the resulting absence of craft work in villages is based on insufficient knowledge of the archaeological record, and does not take into consideration the important evidence of Merovingian craftsmen's burials, for example (for smiths' burials see Henning 1991a; *idem* 2004a).

23 e.g. Galinié 1994, 10.

from the eastern borders of Bavaria to the middle Loire valley in the west.[24] These are the continental landscapes north of the Alps where the core of the Frankish realm was established, and include Neustria and Austrasia, Burgundy, Alemannia and Bavaria, Thuringia, and somewhat later Saxony. They are zones with a certain dominance of Germanic elements of life style (settlement and rural building structures, cemeteries of the row grave type etc.), but exclude the Mediterranean and Atlantic coastal areas with their stronger Roman traditions. The area under investigation is thus a part of Europe that offers an apparently contradictory picture of exceptional strong new beginnings: on the one hand of fertile changes in some areas, as well of obvious decline from the Roman to the post-Roman period; but also of continuity and transformation of many elements that in the long run became decisive, and were clearly no less responsible for the dynamism and success of these regions.

The following compilation of non-alimentary activities is restricted to archaeological finds that can be interpreted as significant evidence for professional craft working activities: for example glass making, production of antler combs, non-ferrous metal casting and processing, advanced pottery production using kilns and the potter's wheel, and iron working/forging. The complexity of knowledge involved in these activities, and the necessary level of professionalism are indicated by the presence of special forms of production waste, semi-finished products, specialized tools, production installations and workshop equipment. They make it unlikely that such activities are related to a purely domestic economy or the avocations of peasants or nobles, even if in exceptional cases this cannot be excluded. The case of the treasurer of the Merovingian Royal Chamber, Eligius, who was later Bishop of Tours and Noyon and who dealt with gold working in person, is a rare and noteworthy exception mentioned by contemporary writers who proves the rule.[25] A number of non-alimentary activities, as well as the processing of agricultural products regularly carried out in peasants' households, such as spinning and weaving or bread baking, were generally not included. Certain further activities also had to be excluded since their location depended primarily on the availability of natural resources such as mineral deposits (e.g. ore smelting) and energy (water power for grain milling, etc.). Thus they were largely independent of any changing relationships between town and countryside. Evidence for wood, leather, bone and textile working, which were often regular activities performed by peasants who produced and repaired their own equipment, can only be attributed to professional craft production in very exceptional cases where there is excellent preservation of organic materials, or the evidence of finds is indisputable, as in the case of a carpenter buried

24 For the basic data: see Henning 1994; for additional information for Germany: Baumhauer 2000, for France: Peytremann 2003 (rural sphere), Annuaire 1996-2005 and Bulletin 1993-2006 (towns).

25 For Eligius: see Alexandre-Bidon 2000-2001.

with his equipment[26], large quantities of shoemaker's waste,[27] or specialized weaving workshops[28] or treadmills.[29] On the other hand, unimpressive finds such as boar tusks can turn out to be proof of highly specialized craft activities such as the polishing of leaf gold,[30] while an unusual percentage of sheep bones may indicate local specialization in wool production.[31]

Clear indications of professional craft activities of the types described above have been attributed as far as possible to the following types of sites and find complexes:

Type 1: Old Roman towns

This group contains sites with urban or at least town-like central settlement character, which existed as such in late Antiquity and have delivered post-Roman indications of craft activities, irrespective of their probable early medieval function and of settlement continuity.

Type 2: Early towns or town-like settlements

This group includes early medieval "proto-towns" and town-like sites or settlements with at least central functions. They are without late antique predecessors and are grouped here irrespective of their character as proto-urban trading sites or suburban (service) settlements closely attached to royal or princely palaces or fortifications.

Type 3: Monasteries as towns

Under this heading sites are grouped where there is evidence of craft activity either directly in monastic or canonical buildings, or from workshops or production areas under monastic control situated nearby.

Type 4: Early medieval European towns

This group consists of early medieval towns that came into existence generally after AD 900, or town-like central settlements without late antique predecessors and not, or at best only indirectly, related topographically to aristocratic power, irrespective of whether or not they were descendants of earlier non-agrarian settlements of type 2 or 3. At least topographically they are the antecedents of medieval communal towns.

Type 5: Rural craft centers

Sites grouped together under this heading have their roots in the rural milieu, without any archaeologically visible direct dependency on aristocratic power structures, and with differentiated and concentrated craft activity (multiple

26 Geisler 1998, 373 (Straubing cemetery, sixth century)

27 Mould/Carlisle/Cameron 2003.

28 See the situation in the tenth-eleventh century Ottonian palaces (Pfalzen) of Helfta with their exceptionally high portion of Grubenhäuser with weaving installations (Donat 1988) and Tilleda with weaving houses which are longer than is usually the case (Grimm 1990).

29 Treadmills probably from the 10th century: Clemens/Matheus 1996a, 233.

30 Müller/Prilloff 2005-2006.

31 Yvinec 1986.

workshops or workshops of above average dimensions). Their status is difficult to determine, and the common views that they were affiliated to manorial organizations, or were regional rural specialized sites of seasonal character remain assumptions. These sites decline and disappear sooner or later.

Type 6: Village or rural workshops

This group encompasses single craft activities or small workshops in the rural milieu. More often than not they belong to a village, or such a relationship must be assumed.

Type 7: Rural evidence

Various types of isolated evidence are included here, e.g. single finds from the non-urban milieu attesting to craft activities. A special group of finds are craftsmen's burials, which regularly have no directly visible connection to a particular settlement type. The extent of most of the cemeteries that have delivered such burials and their situation in the countryside, however, suggest close connections to rural sites or villages in particular.

The evidence collected for this study was then attributed as best as the archaeological or context dating permitted to three chronological time layers of approximately two centuries each, and mapped correspondingly (Figs 1-3).

Period A: c. AD 500 - 700, more or less the Merovingian period,

Period B: c. AD 700 - 900, including the classical Carolingian period, and

Period C: c. AD 900 - 1100, covering the final Carolingian or post-Carolingian (Capetingian-Ottonian/Salian) period on the eve of the communal European town.

Certainly evidence cannot always be precisely dated, and in some cases date spans cover parts of two chronological layers, or else there are sites where craft activity existed over a longer time span bridging chronological layers. In such cases the sites were included in the maps for both chronological layers. Since there are no signs that such dating problems particularly affect a specific period, it can be assumed that these uncertainties have no significant effect on the comparative analysis, which anyway only serves to make trends and tendencies visible.

Furthermore, it must be stressed that it is difficult to draw conclusions from the archaeological evidence concerning the production capacity of workshops or the quantitative relations between single types of craft production, either in general or in relation to a particular site. This is true especially for modern urban spaces, which have been occupied more or less continuously for centuries, and where archaeological investigations often are restricted to only very small sections of those potentially used in early medieval times. Thus it is no wonder that there is a high number of urban and urban-like sites where craft activities are attested only indirectly through isolated single finds, and that discoveries of production areas are rare exceptions (types 1 to 4) which are generally restricted to cases of settlement abandonment or displacement (e.g. type 2). Because of the difficulties caused by unequal transmission of archaeological evidence, the different

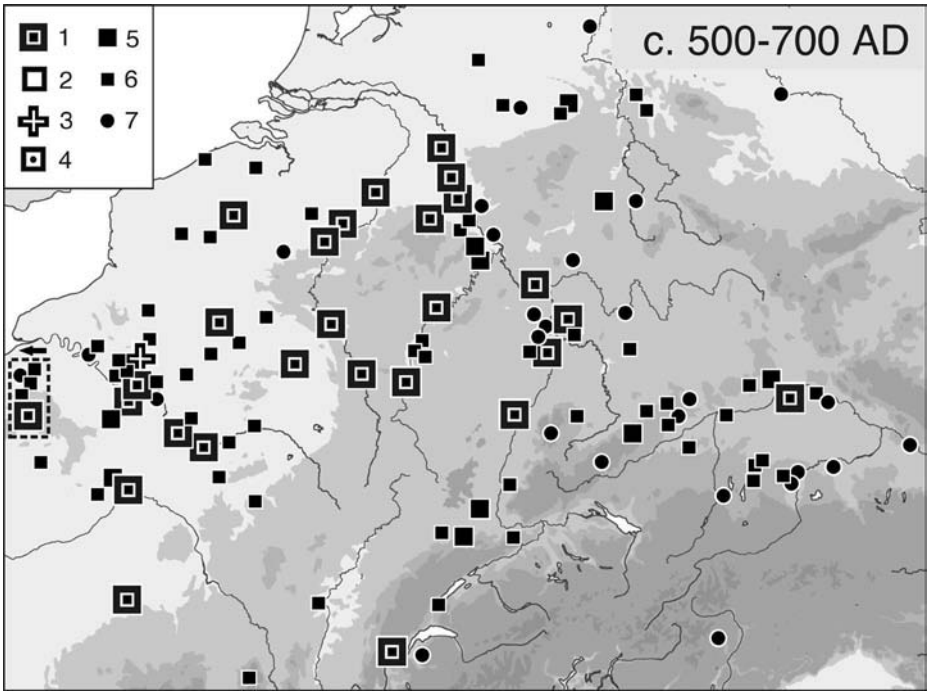

Fig. 1. Archaeological evidence of craft production in the Merovingian period: from urban settlements (1), from monasteries (3) and from the countryside (5-7). For the detailed key see fig. 3

settlement types were only mapped and compared in cases where they have delivered evidence of professional craft activity at the level described. The only exception to this principle was made in the case of rural craft centers (type 5), where the extent of the evidence offers an opportunity to define a special site type different from those with small-scale activities which were predominantly connected with villages (types 6 and 7). At this stage of the analysis the different forms of craft activity were not placed in any statistical relationship to types of sites, although a number of such observations were made and are presented below. Otherwise, only sites with general evidence for professional craft activity were included in the maps and in the concluding statistics.

The results of the analysis (Figs 1-4) are as follows.

3. The general trend: a temporary decelerated upturn

Judging from the total number of sites that can be attributed to each of the three chronological stages (A-C), it is clear that post-Roman craft production started at a considerably higher level than has commonly been assumed. Surprisingly the total of 121

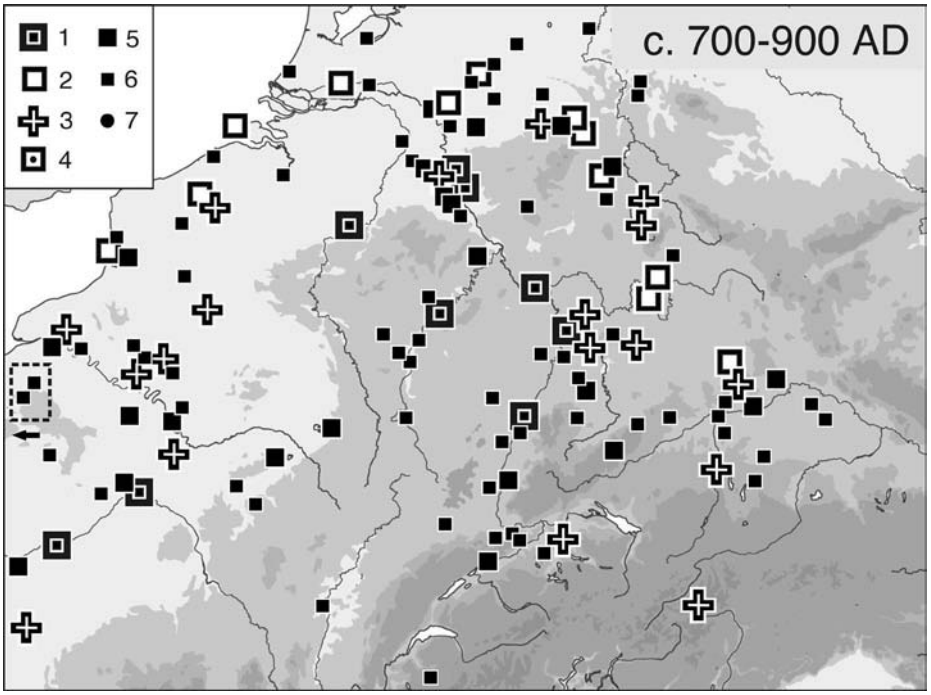

Fig. 2. Archaeological evidence of craft production in the Carolingian period: from urban and proto-urban settlements (1, 2), from monasteries (3) and from the countryside (5-7). For the detailed key see fig. 3

Merovingian sites with evidence for craft activities (period A) hardly differs from the 120 attributable to the following, that is Carolingian epoch (period B). The quantitative situation changes dramatically only after AD 900 (period C). The number of sites experiences a visible upturn to 151, an increase of some 25 %. What is more, it can be demonstrated that in principle in post-Roman continental Europe north of the Alps there was continuity of all known basic late Roman technologies for producing everyday goods in large quantities. The potter's wheel and the relevant kilns did not disappear in the Merovingian period. Glass making in the Roman tradition is attested early in the Frankish Rhineland and elsewhere. The highly sophisticated antler-working (combs, caskets etc.) of the Merovingian period shows no basic loss of production skills when compared with its Roman predecessor.[32] Wood working and fine carpentry using the plane, the framed saw and the turning lathe remained on a high level, as well-preserved finds of wooden objects from burials demonstrate.[33] The same seems to be true for certain kinds of luxury production, and again in the light of finds from burials it must be

32 Theune-Grosskopf 1994.
33 Aufleger 1996.

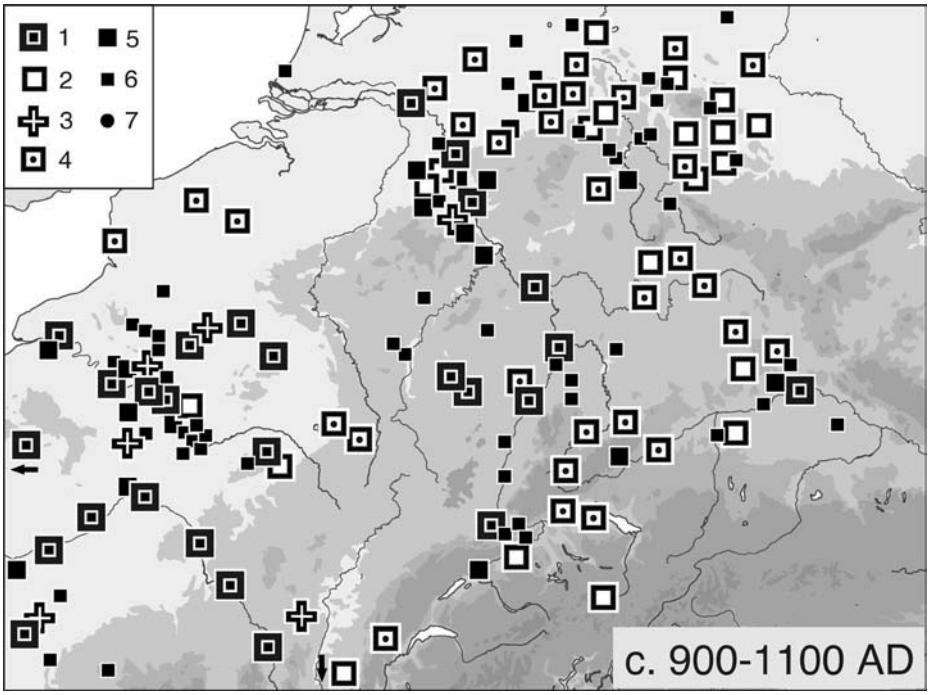

Fig. 3. Archaeological evidence of craft production in the final Carolingian or post-Carolingian (Capetingian-Ottonian/Salian) period: from urban and proto-urban settlements (1, 2, 4), from monasteries (3) and from the countryside (5-7). Key: 1 - old Roman towns (civitates), 2 - early towns or town-like settlements (emporia, wics etc.), 3 - monasteries as towns, 4 - early medieval European towns ("new towns"), 5 - rural craft centers, 6 - village or rural workshops, 7 - rural evidence

assumed that there was highly developed textile production, e.g. gold weaving, north of the Alps.[34] Recently chemical analysis has thrown doubt on whether the so-called Coptic bronze vessels found along the Rhine and across the Channel in the second half of the Merovingian period really were produced in the Byzantine Eastern Mediterranean. A local production in Italy or southern France for at least some of them has now been established.[35] Similar analytical techniques have also demonstrated that local European deposits of precious stones, which earlier had been imported from India, were exploited in the Merovingian period for the production of luxurious jewelry.[36] Merovingian goldsmiths were fully aware of late Roman technologies for non-ferrous metalworking.[37] Western European weapon production technology, which was so admired by the Arabs

34 Raub/Weiss 1995.
35 Périn 2005, 97.
36 Freeden 2000.
37 Henning 1991a.

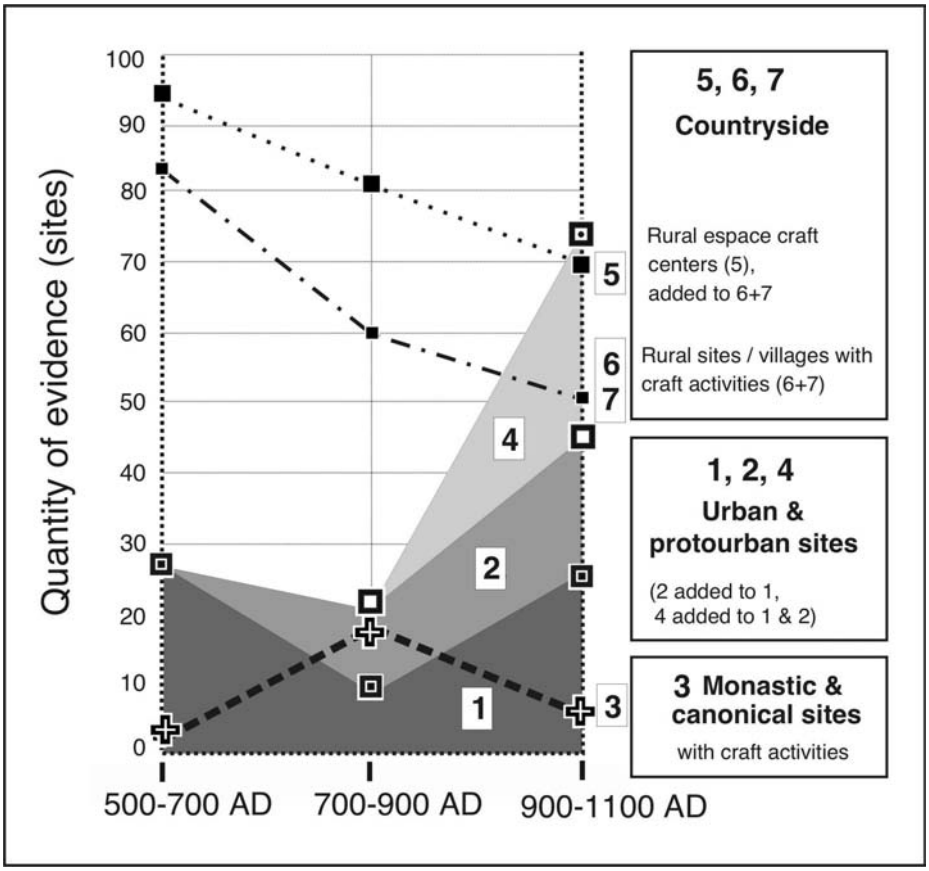

Fig. 4. Craft production and continental European "urbanization" in the post-Roman centuries (500-1100 AD): summary of the archaeological evidence. While workshops in the rural milieu (5, 6, 7) decline, the total number of all kinds of craft activities in non-rural settlements, such as towns, proto-towns etc. (1, 2, 4), grows. In the Carolingian period the peak of monastic craft production (3) corresponds with the nadir of workshop production in old Roman centers (1). This was compensated for only in part by the growing number of emporia, wics etc. (2). The period after 900 AD shows a surprising dynamism evidenced by a strong upsurge of craft production in "new towns" (4)

in the age of Charlemagne, had already reached its peak in the early Merovingian period.[38] In short: not one of the advanced production technologies so often attributed to the positive influence of Carolingian monastery workshops needed to be rediscovered in the eighth century.

38 La Salvia 1998; Feuerbach 2002; on the use of water-wheels in pre-Carolingian smithies: see now Senn Bischofberger 2005, 28-30.

Yet changes in the composition of types of sites from the non-rural and rural domains suggest that there were still significant modifications in the structure of continental Europe's craft production between the Merovingian and Carolingian periods. At first sight there seems to be a constant but slow decline of rural based craft production in the course of the first millennium. The number of such rural sites falls from 93 in Merovingian times (period A), to 81 in Carolingian times (period B) and 71 in AD 900-1100 (period C). However, when these numbers are seen in relation to the number of non-rural sites with evidence of craft production a sharper change occurs after AD 900 (period C). From 77.7 % in the Merovingian period there is only a small decline to 67.5 % in the age of the Carolingians, but after AD 900 the number of rural craft production sites drops dramatically to 47.0 %. This is the first time that the percentage of rural based sites for craft activities falls below 50 % in post-Roman continental Europe. In other words, although rural craft production declined, it was still an important factor in the Merovingian and Carolingian economies (periods A & B), before significant changes occurred after AD 900 (period C).

Another observation on extended rural craft centers may also throw light on the changing situation in the countryside. The number of such centers doubles from 10 in the Merovingian period to 21 in the Carolingian age, but thereafter does not grow significantly, remaining at 19 in period C. When compared with the number of other sites with central character (settlement types 1-4) a rise from 25 % to 34 % between periods A and B is clearly visible, whereas after the transition to period C the proportion sinks to 20 %, a level that is even lower than during the Merovingian period. The existence of large rural iron workshops and wealthy village-based blacksmiths that were even fief holders is attested for the manorial network of St Emmeram Abbey in Regensburg (AD 820),[39] and the large Carolingian iron working site of Vert-Saint-Denis looks like a vivid illustration of this.[40] What is the reason for this peak in the creation of non-urban craft concentrations under the Carolingians? We will come back to this question when looking at similar peaks and troughs in the development of other production sites that occurred in the same period.

The first conclusion that can be draw at this point is that, judging by the shift from predominantly rural based production to a growing concentration of sites predominantly of a non-rural character, the conditions for urban development in the first millennium as a whole improved. This trend, however, was neither uniform nor continuous. On the contrary, the Carolingian age in particular saw a short-lived reversal of the general trend with a temporary increase in craft concentrations in the countryside. This may have led to a reduction in productive potential during the transition from the Merovingian to the Carolingian period (from A to B), whereas an unusually dynamic development was initiated in post-Carolingian times (C). In many ways this dynamic

39 Heinzelmann 1977, 208.
40 Daveau/Goustard/Bahain 2000.

had traits of a "return to pre-Carolingian standards", but as will be shown below, these standards were in fact now even surpassed.

4. The late decline of Roman urban centers and their post-Carolingian revival

In the past two decades archaeology has uncovered surprisingly clear evidence of post-Roman, that is late fifth to seventh century craft production concentrated in former late antique urban centers, indicating the continued existence of such settlements, whatever the exact level of survival of their urban structures and central functions in the first centuries of the early medieval period may have been.[41] The discovery of pre-Carolingian industrial activities associated with evidence for trade and exchange between the late Roman city walls of Mainz and the Rhine waterfront in 1982, which was published more than a decade ago by Egon Wamers,[42] is no longer an isolated case. Merovingian industrial areas with glass kilns have been found recently at the Heumarkt area in Cologne,[43] and glass frit has been found in sixth century Maastricht.[44] Numerous finds of casting moulds and production waste are evidence for non-ferrous metal casting during the same period from Namur,[45] Huy and Tournai.[46] This is regularly associated with other production activities such as antler working, etc. Merovingian pottery workshops are clearly associated with late antique fortified central settlements and have been uncovered at sites such as Krefeld-Gellep,[47] Bonn,[48] Huy,[49] Ladenburg,[50] Soissons[51] and Regensburg.[52] Production of fibulas and other accoutrements is attested for the sixth century by lead models in Paris,[53] Trier[54] and Geneva,[55] as well as for the early seventh

41 For the continuity of many of the older Roman towns in the Merovingian west see Verslype 2001, 140. For urban functions in the sixth century and at most „little decline": Loseby 1998, 283-284; *idem* 2000.
42 Wamers 1994, 172: from the late sixth to the early seventh century at the latest.
43 Trier 2002, 303: from the early sixth century at the latest.
44 Dijkmann 1992, 370-371.
45 Plumier 1999.
46 Personal communication by Raymond Brulet (Louvain-la-Neuve).
47 Pirling 1960, 149/fig. 1.
48 Sölter 1976, 71-72.
49 Willems 1994.
50 Heukemes 1981.
51 Hardy 1998.
52 Eichinger/Wintergerst 1997/98.
53 Périn 1985, 493/fig. 516.
54 Clemens 2001, 45/fig. 2.
55 Bonnet/Martin 1982.

century in Mainz.[56] This picture corresponds with Gregory of Tours' description of sixth century towns in Gaul which shows that Paris, for example, was still (or once again) a lively city with workshops offering precious goods to visitors walking through the streets.[57] In particular, the finds from Geneva and Mainz indicate that either products designed for distant markets (e.g. Anglo-Saxon England) were manufactured here by local craftsmen, or foreign producers visited these towns and worked there for a while in their native tradition. Long-distance travel and exchange, as well as international connections were apparently associated with these centers and had their roots in late Antiquity.[58] The existence of 27 such type 1 settlements with archaeological evidence for production activities in Merovingian times (AD 500-700) is quite remarkable compared with the development that followed in period B.

This period (AD 700-900) saw a distinct drop to just 9 such sites with a Roman settlement tradition, that is a reduction of two thirds. In other words, only one third of type 1 sites with craft production seem to have survived, and references to workshops in towns, such as a *fabrica* in Mainz that was given to the monastery of Fulda about AD 800, are rare exceptions.[59] Since the total number of sites with evidence for industrial activity remains roughly the same in the two periods A and B, clearly there must have been genuine structural change. This assumption is supported by the increase in the number of sites with a Roman urban tradition and with evidence for production activity that is to be observed in the post-Carolingian period C (AD 900-1100), when the number of such sites, 26, return to the pre-Carolingian level.[60]

When attempting to explain these trends it is important to remember the temporary increase in the number of rural craft production centers that went hand in hand with the decline of the productive role of old Roman central settlements in the Carolingian period. Certainly there was interdependency. Increased industrial activity in the countryside indicates a growing rural self-sufficiency, and this must have led to a decline in the ability of non-rural production sites to sell their goods. Considerable complications may also have arisen for the older town centers (*civitates*) from changing practices in the collection of tolls in Carolingian times.[61] From the late seventh century there was an increase in the number of exemptions from toll payment granted to ecclesiastical, and especially monastic institutions to the benefit of their rural manorial centers and of

56 Wamers 1994, 165-167/fig. 290-291.

57 See Claude 1981, 228-260, who states that most information about craftsmen from the Merovingian period refer to the urban sphere, and Lebecq 1996, 297. For the same situation of craft concentration in the Lombard cities in the 6/7th centuries, see: Brogiolo 2000.

58 For far-reaching exchange contacts across the Channel as early as the Merovingian period see Thomas 1990 (written sources) and Vierck 1970 (archaeological evidence); as far as Scandinavia: Lundström 1985.

59 Ennen 1975, 9.

60 Similar trends have also been observed on the local level, see: Verhaeghe 1990.

61 Ganshof 1959.

merchants dependent on abbeys. Consequently, local market activities in the rural manorial sphere developed increasingly to the disadvantage of the old *civitates*. According to written sources more than 100 such rural, predominantly manorial, sites where a degree of exchange was practiced evolved in the eighth to ninth centuries between the Seine and the Rhine.[62]

The temporary nadir in the survival of Roman urban traditions resulting from these developments surprisingly occurred centuries after the actual collapse of the Roman state administration in the West, and contradicts the widespread view of the causative role of the Barbarian invasions for the decline of urban structures.[63] Late Roman eyewitness reports from around the mid fifth century and later illuminate the process of the much-vaunted urban decline during the period. Describing the destructive impact of the immense increase in tax and similar excruciating burdens weighing on the towns' populations, these contemporary comments fit extremely well with the assumption of an early urban recovery in the fifth century with "markets of the Barbarians"[64] and easier social relations that came once power was in the hands of the Barbarians.[65] The breakdown and subsequent incomplete and slow recreation of power structures on the local, rural level might also have been beneficial for the development of post-Roman towns until the end of the Merovingian period.

5. The monastery as a town: economy at the abyss?

Archaeology is now able to confirm that the early ninth century plan of the monastery of St Gall was not just a monk's fantasy, nor a fanciful concept disconnected from reality and useful only in the context of intellectual discussion. Production activities within the walls of monasteries really did peak in Carolingian times. Whereas just one example of archaeological evidence for production at a monastery is known from Merovingian

62 Bleiber 1981, 115-127.

63 Recently Ward-Perkins (2005) has revived this traditional view of urban decline caused by the Barbarians.

64 Eugippius, Vita Severini 9, 1; with references to traders and trade: *idem* 12, 2 and 28, 2.

65 For the improvements that occurred around the middle of the fifth century in those cities of Gaul which were taken over by the barbarians, and the growing attractiveness for Roman citizens fleeing to such areas from heavy tax burdens and from oppression by the urban aristocracy: see Salvian, De gubernatione Dei 7, p. 223: "No cities are free of evil haunts, no cities anywhere are free from indecency, except those in which barbarians have begun to live". A similar situation of Roman citizens in Italy fleeing from tax burdens to the barbarians is reported by Procopius (Anekdota 11, pp. 76-77). John of Ephesos (hist. eccl. 31, p. 256) damns the Roman elite of Salona in Dalmatia for not taking care of the hungry inhabitants, while praising the barbarians for changing the situation for the better after they took over the city. So too in the east the arrival of tax collectors was more feared than that of the barbarians (John Lydus, De magistr. 3, 70, p. 162).

times (period A), from St Denis near Paris where there was jewelry production in the sixth/seventh centuries,[66] the number of such monastic (or canonical) sites increases dramatically to 18 in the Carolingian age (period B). In post-Carolingian times, after AD 900 (period C), the number then decreases again, by two third to just six.
The temporary peak in Carolingian times is excellently illustrated by the archaeological evidence for industrial production discovered at such famous monasteries as Fulda (glass working, non-ferrous metal casting, comb production),[67] Corvey (glass working, non-ferrous metal casting),[68] Lorsch (glass working, comb production),[69] and St Denis (comb production).[70] The regular presence of high-status industries such as glass working and metal casting, as well as antler-working (combs, caskets) which was typical of the *emporia*, confirms that monastic production without doubt was on a par with the most advanced post-Roman urban settlements and early trading centers.[71]

When considering the contribution of monasteries to the development of the early medieval exchange economy, and in particular the role of production activities at them, one has to differentiate between those activities that were directly organized by the monasteries with their monks, lay servants and serfs on the one had, and those which took place outside the monastery and were in the hands of persons who were in principle self-employed or self-managed but obliged to pay rents, taxes and tolls to the monastery. The archaeological cases mentioned above refer to structures that were either found directly in monastic or canonical structural complexes, or material, for example waste, that had been disposed of nearby.[72] Thus most such finds very probably must be related to the first group of activities, those that took place within what was called a "planned monastic city".

Studies based on written sources often emphasize the extremely important role that the monastic sphere is supposed to have played in the rise of the European town. But rarely are questions asked about precisely where the driving impact of the different forms of monastic activities mentioned above upon the economy actually will have come from. More often than not a simple collation of the many cases of craft activities in the broader monastic environment, and unspecific references to general connections

66 Périn 1993. Only few written sources mention Merovingian monastic workshops, for example at St Eligius abbey in Solignac, see. Ennen 1975, 9.
67 Kind/Kronz/Wedepohl 2004.
68 Stephan 1994.
69 Sanke/Wedepohl/Kronz 2002.
70 Wyss 1996 (http://www.saint-denis.culture.fr/fr/4_4_recherche.htm).
71 For comparison see the similar production spectrum of Maastricht in Merovingian times: Dijkmann 1992 (glass production, non-ferrous metal casting, comb making). Glass products were also made on site in smaller Carolingian monasteries; see Müstair/Switzerland: Goll 2001 and San Vincenzo al Vultorno: Mitchell 1996
72 E.g. the materials from production-related activities within the monastery at Fulda disposed of outside it, see: Kind/Kronz/Wedepohl 2004.

between monasteries and the world of exchange and trade are considered sufficient to postulate an important role for them in the development of Europeans town under the Carolingian dynasty.[73] But it is open to question whether the growing number of written references to such monastic activities in Carolingian times, which undoubtedly existed, can so easily be equated with a growing driving impact upon the market economy. The opposite may in fact be true.

There is indeed a great deal of written evidence for craft or industrial activities within Carolingian monasteries. It is sufficient here to refer to the careful compilation published by Fred Schwind.[74] There can be no doubt, however, about the objective of this activity in the monastic workshops by shoemakers, saddlers, sword and shield makers, turners, tanners, gold workers, fullers and blacksmiths, to mention just a few of the craftsmen that can be deduced from the plan of St Gall. What is more, this programmatic list is very similar to the actual situation at Benedictine abbeys such as Centula-St Riquier, Corbie and Bobbio. For the Benedictines, self-sufficiency and the requirement that the monks do physical work were the basic reasons for conducting industrial activities in monasteries. Selling monastic products at markets was not excluded explicitly, but nevertheless regarded as an exception to the rule.[75] The purchase of products from outside was also restricted to very few specific exceptions such as textiles. Spinning and weaving was essentially a female occupation, and consequently no *Gynaeceum* could exist within a male monastery. However, spinning and weaving were, of course, normal occupations for nuns.[76] Products from monastic workshops were sometimes used for barter exchanges in order to gain new landed property for the monastery, and similar cases concerning "payments" with weapons are reported from Fulda, Lorsch and St Gall. It goes without saying that a considerable part of a monastery's production of weapons was needed for the abbot's own military obligations to the king, so such weapons will probably never have seen a market. Furthermore, a strong emphasis on self-sufficiency can be deduced from the extraordinarily broad spectrum of crafts attested in monasteries by written and archaeological sources, and the lack of any visible focuses or specializations. Instead the spectrum seems to observe the rule that "nothing shall be missing", and we know from the *Capitulare de villis* that this rule was similarly practiced in the royal *curtes*.[77] Notger of St Gall mentions specialized crafts

73 Lebecq 2000, 140; Balzaretti 1996, 226: (Monasteries) „served to link town and country in the Carolingian period."; and the same: *idem* 2000, 254-255.

74 Schwind 1984, with detailed references.

75 *Idem*, 110 footnote 34.

76 See: Claude 1981, 235.

77 c. 45 (*Ut unusquisque iudex in suo ministerio bonos habeat artifices, id est*) blacksmiths, gold and silver workers, shoemakers, tanners, carpenters, shield makers, fishermen, fowlers, soap makers, brewers, butchers, net makers and (*necnon et reliquos ministeriales quos ad numerandum longum est*).

such as glass or bell making being practiced by monks.[78] However, for most of the usual industrial activities the written inventories and *regulae* inform us that lay servants (*famuli*), domestic slaves/serfs (*vernae*) or beneficiaries (*provendarii*) regularly worked within the monasteries (*intra muros),* or in rare cases such as millers, foresters or fishermen in the immediate vicinity (*extra muros*). Monastic craftsmen were supervised and controlled by a strong administrative hierarchy which included the *praepositus*, the *decanus*, the *camerarius* and others. Thus glassmakers and specialized builders, for example, were commandeered to sites whenever ecclesiastical construction works was underway,[79] and it is no wonder that in a command economy like this there was everywhere lamentation over corruption and mismanagement. There are similar reports for Corbie and St Gaul, and according to Einhard Charlemagne's construction site in Aachen was not an exception either.[80] This is quite definitely not the open production network that would support free market relations. The opposite is the case: this form of monastic craft production was part of a controlled economy, a command production that served to enforce and improve the self-sufficiency of monastic communities. Franz Staab was quite right to compare productive Carolingian monasteries with the hierarchical structure of Roman villa estates based on slave labor.[81] The non-rural components of these villas, such as the production of simple everyday goods, clothing and equipment with the objective of maximizing autarky had a constant negative effect on the market economy. And since this component was even more pronounced in Carolingian monasteries than in Columella's rural villa, it must have been a genuine handicap for the unfolding of the forces of an exchange and market economy in early medieval times. In other words, the monastery with its crafts, or the "planned monastic city", represents anything but the future of European town development. Economically it was an anachronistic revival of elements of the past that returned to Europe. There were more than 650 monasteries in the Frankish territories north of the Alps, some of them with up to 600 persons (e.g. Fulda in AD 825/26) living under their autarkic roof. They had little contact with the market, and year after year, decade after decade, for more than 200 years represented a serious limitation and threat to the conditions for a market and town economy in early medieval Europe.

Nor were the monastic non-alimentary activities outside the monasteries much more helpful. The inventory of St Riquier of AD 831[82] is a unique document describing relations between the monastery and the settlement of *Centula* situated nearby, and which was dependent on the abbey. The inhabitants produced agricultural goods to a limited extent, while the presence of craftsmen and traders, as well as market activities

78 Schwind 1984, 110 footnote 33.
79 Lebecq 1996, 297.
80 Dette 1996, 87.
81 Staab 1993, 4, 17.
82 Hariulf, Chronique.

are also attested. The number of inhabitants is stated as being 2,500, and it is probably correct to call this settlement a monastic town at this point in its existence. Originally, however, it did not owe its existence to the abbey. It was first mentioned as early as the fifth century, and was very probably already fortified then. It survived the Frankish conquest, and the abbey that was founded in the seventh century must have brought the settlement under its control step by step. In the early ninth century, when the inventory was compiled, all the inhabitants were obliged to pay rents in money, or in raw materials or kind, as well as market taxes (*de mercato*) and tolls (*de commeatu*), to the monastery. Craft products were simply ordered on demand as services and rents to the monastery. The monks neither delivered raw material for their manufacture nor had to pay a single penny for the finished products they received. The relationship between monastery and town was of a simple tributary character. There was practically no need for a monetary economy, and it would be implausible to claim that this archaic relationship was an innovative driving force. In economic terms it was little more than a parasitic absorption of the wealth produced by those activities which were not organized by the monastery. However, that such activities undoubtedly did take place in *Centula* can be extrapolated from the context of the inventory. There was productive activity for the market, and there was trade relying on merchants connected with a monetary economy as intermediaries. It was precisely the section of the self-managed working capacity that was destined for the market, and was not directly controlled by the abbey – though the abbey benefited from it – which propelled the economy and encouraged the development of the post-Roman European town model. The "planned monastic city" with its various facets remained an intermezzo and declined after AD 900, for it was more of a burden than an impulse for economic advancement.

It would be going too far to argue that autarkic production-related activity in the monastic cities was directly responsible for the many economic and nutritional problems of the period, such as the numerous famines, bad harvests and plagues that tormented contemporaries. But if an economy that was repeatedly faced with such serious problems sometimes stood at the edge of the abyss, the "planned monastic city" was quite the wrong concept to overcome such difficulties. In the first centuries of the post-Roman age the old Roman centers had clearly been the surviving elements of a market or exchange economy, supplying the countryside at least in part with the goods and equipment it needed. Their decline in the Carolingian period cannot be viewed independently of the economic disruption and decline that was caused by the realization of planned economic concepts and practices of absorption that were beneficial to the powerful but harmful for society as a whole.

It was not, of course, the design of Carolingian and earlier monasticism to disrupt the economy, nor to decelerate town development. But it did so, nonetheless. The reasons for this are primarily connected with the considerable changes that the post-Roman rural world experienced in the Carolingian period, and this is the second, more serious aspect of an economy at the edge of the abyss.

6. Agriculture

This is not the place for a detailed survey of the agricultural situation in the post-Roman period, but a brief look is necessary for a better understanding of the cycles of early medieval town development. On the one hand the level of agrarian surplus production is decisive for the potential extent of the release of people (craftsmen, traders and others such as clergy and aristocrats) from alimentary production. On the other hand it is important to know to what extent the profit that resulted from surplus agricultural production was actually available for productive investment and economic growth, and how much of it flowed into aristocratic consumption.

Inhabitants of non-agrarian settlements subordinated to Carolingian monasteries were in principle treated the same as dependent peasants, who in this period were increasingly included in the *curtis* system of manorial organization. In much the same way as the inhabitants of the monastic town of *Centula,* rural tenants had to pay rents in kind or to a much lesser extent in money, and they had to be ready to render labor services to the landowner at a level fixed by contract. These labor services had to be performed on the demesne's, that is the landowner's, arable land, which was part of the lordly farmstead, the *curtis dominica*. This institution of forced labor by the tenants of small farmsteads was a new invention of the first half of the eighth century in the Carolingian heartlands.[83] As far as we know it was predominantly practiced in the monastic sphere, but was also characteristic for fiscal lands, whereas its extent in lay manors is uncertain. How far did this structural development influence agricultural efficiency, and did it advance surplus production for the market? What was its impact on the development of the urban economy?

An essential point is that the generally held belief that in the Carolingian period agricultural techniques and methods were improved by the invention of the *curtis* system within the framework of the bipartite manor must be rethought in the light of the archaeological evidence. This can be kept short since the evidence has already been published.[84] Well-dated archaeological complexes, for example iron hoards from the Alamannic hilltop settlement of Runder Berg near Urach (Pl. 2), a series of iron implements in continental Merovingian graves,[85] and comparative technical studies have revealed the existence of a highly developed range of agricultural iron implements on a quasi-modern level from the fourth/fifth centuries. Heavy wheeled plows, which in contrast to simple ard plows were able to turn the sods, not only already existed so

83 See Tits-Dieuaide 1985 with a critical reevaluation of the data presented by Ganshof 1959b. The claim that there was a lack of evidence for bipartite manorial structures between Rhine and Loire until the first decades of the eighth century is also relevant for Sarris 2004, who tried to identify continuity from late Antiquity.

84 Henning 2004b.

85 *Idem* 2007.

long before the Carolingian period, but more surprisingly were even available in the technically advanced form of swivel plows – an invention that even recently was still attributed to the thirteenth century or later.[86] These new insights answer the old question of why early medieval Continental iron plowshares are not asymmetrical, as had been anticipated in the light of ethnographic theories of "normal" plow evolution. Contrary to what ethnographic studies suggest, the finely manufactured, thin-bladed and long-handled scythe also did not emerge later, in the high Middle Ages, but was also already known in its fully developed form in the fourth/fifth century, and in an astonishingly high quality that even surpasses what we know from the late seventh to ninth centuries.[87] Advanced iron plowshares also seem to have undergone a similar simplification in the transition from the Merovingian to the Carolingian period, before again reaching the pre-Carolingian standard after AD 900.[88]

However these ambiguous changes in the size and perfection of iron implements are to be interpreted, and irrespective of the possibility they may reflect previously unknown difficulties that peasant households may have had in the Carolingian period in acquiring sufficient draft animals or supplies of iron, it is a fact that all the advanced agricultural technologies deducible from the archaeological record were exercised in the rural sphere continuously from the decline of Roman power and throughout the Merovingian age.[89] Thus there can be no doubt they were well known to the small tenants who had to render unpopular labor services on the arable land of the Carolingian *curtis* manors. Consequently there can be no further talk of a supposed instructive influence of the manorial system upon peasants, tenants and smallholders as regards

86 Fries 1995, 161; Comet 1997, 24.

87 See the example of a high-standard long scythe of the fourth/fifth century from Urach (Pl. 2 - 8; L: 75cm) in contrast to the typical simplified late Merovingian/Carolingian version with a reduced blade length from Avelgem-Kerkhove, Belgium (settlement with materials till mid eighth century): Henning 1991b and from a Carolingian settlement in France: Reigniez 2002, 210. See also the Stotternheim (Thuringia) hoard of the sixth/seventh century with 3 scythes L.: 52 cm (unpublished, Museum Weimar).

88 Two large, sturdy examples from Urach (fourth/fifth c.): Pl. 2 - 16, 17 (L.: 27 and 28 cm), the fifth century plowshare from Tarquimpol: Henning 2004b, 413 fig. 5-7 with further finds (L.: 27.5 cm) and the piece from a 6th century grave from Asseln: Henning 2007, 111 fig. 56, Katalog 118, No. 190-14 (L.: 28.7cm). Well-dated Carolingian plowshares from Winzenburg (Lower Saxony) and Ichtershausen (Thuringia) are made of less than the half amount of iron: Fries 1995, 204, 206; for high medieval pieces which were again larger see: Fries 1995, cat. 320 (Semonice L.: 37 and 38,6 cm) and 322 (Sovadina L.: 32,5 cm).

89 Karl Brunner's 1995 idea of an ambiguous monastic background for early technological innovation and continuation now archaeologically attested is a well-meant but ill-fated attempt to bring together new discoveries with old theories, for it remains unsupported by archaeological finds. The material comes from clearly laic, sometimes even pre-Christian contexts (e.g. fifth century Urach finds).

agricultural technology.[90] How then are we to read the paragraphs of the *Capitulare de villis* and similar written instructions? The self-managing rural inhabitants who had service obligations are requested in these documents to use, for example, the heavy wheeled plow (*carruca*), to cut the meadows with the long-handled scythe (*falx maior*), to manure the fields, to use the screw driven wine press (*torcolarium*), and so on. Yet not a single one of these techniques were new inventions of the Carolingian age. However, a careful rereading that takes into account the peasants' mentality explains the paragraphs: it is not the techniques to be used that were the main point, but the request actually to bring, for example, their own fully equipped heavy plow, and to avoid unauthorized use of the draft animals of the *curtis*. The peasants are not told specifically to use the scythe for mowing, but they are reminded that they must do it carefully and at the right time on the lord's meadows. The *Capitulare de villis* (c. 48) does not invent the screw driven wine press, but rather the peasants were obliged to use only the press and not to prepare the grapes by trampling them with their feet in a cuvée, as had been the usual practice in combination with the press everywhere for centuries, and was still widely practiced until the nineteenth century in leading wine producing regions.[91] It is not the technical aspect that was being referred to, but rather there was a concern that those trampling the grapes would be doing something that is neither pleasant (*nitida*) nor honorable (*honesta*), as the text goes mutatis mutandis. God only knows what the king was told about his cunning and revengeful subjects, or what they were able to do in the cuvée in an unobserved moment.[92] Other paragraphs of the *Capitulare* get straight to the point: harsh corporal punishments and monetary penalties are threatened for carelessness (c. 4). The stewards shall supervise personally all labor services on the demesne's land in order to avoid losses (c. 5), and they shall uncover all kinds of wrongdoing such as the secreting of seed grain by the ordinary people who used to hide it in their own granaries (c. 51). The list of orders addressed to the stewards is long, and from it we can deduce their commonest wrongdoings, such as using the labor services of the tenants for their own profit (c. 3), converting the earnings of the lord's *curtis* to their own use (c. 31), plowing their own fields with the teams of the *curtis* (c. 31), and so on.

Except for the landowner himself – in this particular case the king –, who usually was not present at the site, none of the numerous persons working for the *curtis* can be identified as being genuinely interested in augmenting the productivity of the unit. The conclusion is inevitable: the *curtis* system was designed for the efficient absorp-

90 For this earlier view based on the nineteenth century theories of August Meitzen and Karl Theodor von Inama-Sternegg see most recently the revival by Hildebrand 1989, 137 and the critical review of Derville 1994.

91 Clemens/Matheus 1996b, 268.

92 Updating the topos of a Carolingian innovation: Lebecq 2000, 134; see however Clemens/Matheus 1996b.

tion of tributary surplus and was anything but the decisive driving force that led to increased agricultural productivity. No technological innovation whatsoever can be attributed to the system. All advanced agricultural operations were already available to the dependent small landholders, for example heavy plowing according to the cycles of the 3-field rotation system, which was very probably an early post-Roman invention originally practiced in village communities and later adopted or modified in the manor.[93] Wandalbert of Prüm, who described all these advanced methods known to the *agricolae* in the ninth century, states that they had been practiced in Gaul since time immemorial.[94] What the peasants had successfully done for centuries on the land of their "own" farmsteads, with the rise of the Carolingian manor they now also had to do for the landlord on the *curtis*' lands. Their working capacity was split in a very unfruitful way: the days on which they had to work for the landowner's benefit on the *curtis* were lost for their own farm, and consequently they did this work without interest and without individual initiative. A low level of efficiency must have been the result. Labor services sometimes took up to 50% of the peasant's work time and must have had a negative impact on production in the small farmsteads.

This trend to evidently more rigid social relations in the rural sphere of the Carolingian realm, which is often interpreted as a continued existence of slavery till the end of the first millennium, certainly went hand in hand with the slave trade that developed between west and east in this epoch, and which is well-attested by written sources. Michael McCormick has characterized this particularly flourishing aspect of trade as an element that "fuelled the Carolingian economy".[95] This might have been true if the profit of this trade was in fact used for rural and industrial investments, but whether this was so cannot easily be determined by archaeology. On the other hand, however, in contrast to the Merovingian period the numerous finds of Carolingian iron shackles for prisoners and slaves in fact attests to a very remarkable peak in the use of such items in this time, especially in the border and neighboring areas of the Frankish realm where "international" exchange flourished.[96] Considering the problematic developments in the basis of the economy on the Continent described above, there would be also good reason to hold the expansion of the slave trade to be a practice that had to compensate for sinking profits in different fields of everyday production. In such a case we would

93 Derville 1989 and *idem* 1994, 132: with data about the 3-field rotation system that was exercised equally on tenants' and on the demesne's arable land.

94 Wandalbert of Prüm, *De mensium duodecim nominibus*, translated by Herzsohn 1882, 260.

95 McCormick 2002.

96 Henning (forthcoming).

be equally entitled to assume that the difficult state of the Carolingian economic basis "fuelled" the European slave trade.

The new logic of the post-Roman rural system[97] that developed from the fourth/fifth century rested upon the intensive production profile of family based and technically well-equipped small agricultural units cooperating in villages. And given that this system was able to work without major disturbances it was a guarantee for efficiency and growth. This was certainly the case in the periods before and after the "flourishing" of the Carolingian *curtis* system, when self-managing peasants who were dependants of a landlord only had to pay rents in kind or in money, without being obliged to turn their back on their farmsteads. Rent payments in money became especially predominant after AD 900 when the *curtis* declined. Although in the eighth/ninth centuries productivity on peasants' farms might have been higher than in the manorial centers, we are probably correct in assuming a general decline of agricultural efficiency in the age of the bipartite manorial system (eighth/ninth centuries), and this is a bad omen for the evaluation of urban developments in this particular period.

7. The post-Roman urban model

There never was total self-sufficiency of peasants' and tenants' households. Merovingian written sources referring to local victual markets and bishops' letters mentioning concern at food prices (pigs) in Frankish towns indicate that peasants were active at markets.[98] The fact that tenants paid rent in money in the Carolingian period also suggests market relations. Though in many ways complicated and limited by the manorial framework, we can deduce directly from eighth/ninth century written sources that peasant farmsteads had an exchange oriented profile, and this increased in significance in later centuries.[99] So, for example, in the tenth century the iron implements needed in rural households were regularly bought in urban markets (e.g. iron scythes in Weset near Aachen in AD 983),[100] whereas Carolingian sources imply that iron agricultural implements were still produced in peasant villages, as is suggested by the fact that they delivered them to their lords.[101] Carolingian peasants even sold dung, although their lords tried to stop this.[102] The same tendency is also apparent in the *Capitulare de vil-*

97 I would agree with Wickham 1994, 224 that such a system had developed and was significant throughout the middle ages. See also recently: Wickham 2005.

98 Claude 1985.

99 Dyer 1995, 666 with ninth centuries examples for peasants' relations with local markets. Consequently the skepticism of Wickham 1994, 224, and the accentuation of peasant self-sufficiency, seems needless.

100 Dhondt 1968, 315.

101 Kuchenbuch 1978, 290-291; Ennen 1975, 9.

102 Duby 1966, 124.

lis, which tries as far as possible to prevent the *familia*, that is all tenants belonging to a royal *curtis*, from spending too much time (for their own benefit) at markets.[103] On the other hand, the same document attests that seed grain for the *curtis* was purchased from outside. This could mean that either grain produced in the *curtis* was of poorer quality than that from outside, or the quantities produced were sometimes insufficient. In spite of the general aim of autarkic management inside the monasteries, and to a different extent in the manorial complexes with their *curtes*, on the whole these establishments were incorporated into the network of exchange and a monetary economy. The *Capitulare de villis* thus mentions the purchase of wine (c.8) and seed grain (c.32), the sale of chickens and eggs (c. 39), accounts of market transactions (c.62) and the use of money to send profits to the king (c.28). Other agricultural products that were sold by the manorial compounds are named in the *statuta* of the Corbie monastery (grain, vegetables, cattle, sheep).[104] Peasants were always connected with these activities. They had to fulfill transportation orders and were constrained to offer alimentary products at market places controlled by the monastery.[105] We know, unfortunately, next to nothing about the concrete transactions that peasants conducted at markets for their own benefit. They must have taken place, however, and it is this quasi-free element in the exchange networks which, irrespective of its extent, must have been the decisive one in the whole system. Its significance grew particularly after AD 900, when the expansion of money rents went hand in hand with the decline of the *curtis*.

This period saw a significant increase (29 sites) of archaeologically attested craft production in urban settlements of type 4 which had no late antique predecessors, and were not directly or visibly incorporated into aristocratic structures. These sites regularly developed into communal towns after AD 1000, as did many of the revitalized old Roman *civitates* and a certain number of towns of other types. An example of a type 4 settlement that has been well explored archaeologically is Douai in northern France (Fig. 5). But this is certainly not the only case which had its origin in a proto-urban wic or an e*mporium*-like trading place that emerged in Carolingian times. The much discussed decline of Quentovic, Dorestad and of a number of other trading settlements has often concealed the fact that there are many more cases of a continuous development from wics and *emporia* to the immediate forerunners of communal towns, for example Arras and Rouen. These two eighth century *emporia* did not disappear at the end of the Carolingian epoch, and indeed still exist today. In some cases it can be proved on the basis of archaeological evidence that the plot pattern of such non-agrarian settlements existed continuously from the Carolingian period into later centuries, or even present times, as in Emden and Dublin. The regular and planned grid of such early trading sites,

103 c. 54: *Ut unusquisque iudex praevideat quatenus familia nostra ad eorum opus bene laboret et per mercata vacando non eat*.

104 Kuchenbuch 1978, 114.

105 Devroey 1984.

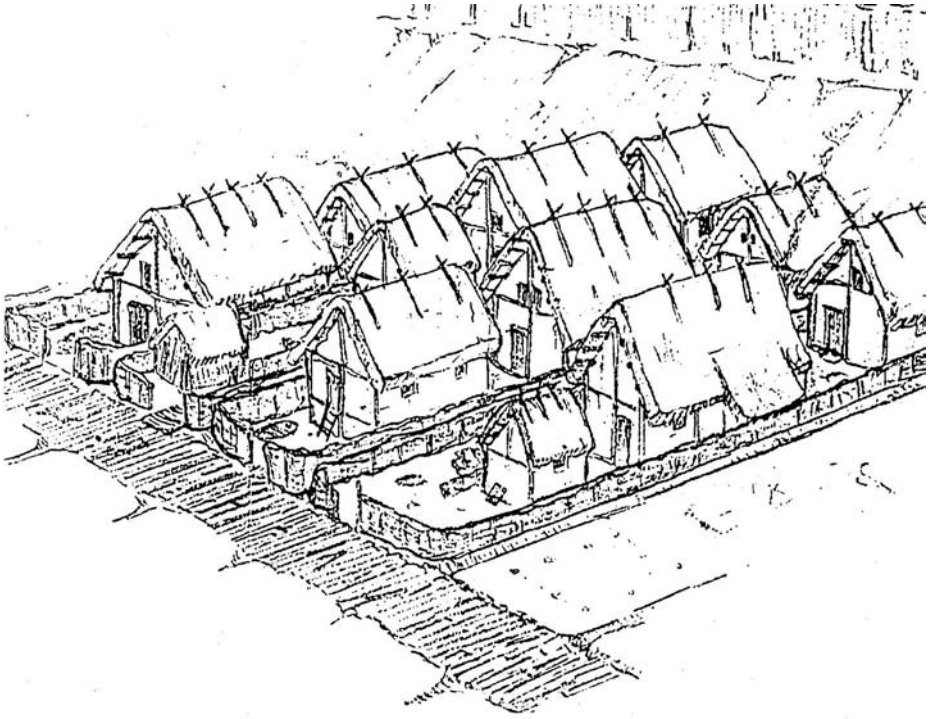

Fig. 5. Attempted reconstruction of the proto-urban settlement phase in Douai (after Demolon). This eighth century settlement probably had an emporia/wic-like regular plan, and developed continuously, perhaps passing to the stage of a "new town" after AD 900 on into the high medieval period, and finally becoming a communal town

which is often held to be a sign of aristocratic creation, should in fact be interpreted in exactly the opposite direction. This is proved by the fact that there are plenty of irregularly structured, apparently poor non-agrarian settlements attached to aristocratic installations which are known to be of a servile character (such as the suburb of the Ottonian palace [Pfalz] of Tilleda).[106] It is precisely the regularity and the long-lasting stability of settlement grids that are an indication of the presence of inhabitants capable of possessing some kind of hereditary property rights of their own.

Aristocratic creations, however, were often unstable, as the archaeological evidence from the eighth century site of Bueraburg in Hessia makes clear (Pl. 4).[107] Although St Boniface described this well-fortified hilltop site as an *oppidum* in his letters to the pope, and installed a bishop at the place in AD 742, no noteworthy development

106 Grimm 1990.
107 Henning/Macphail 2004.

took place. The site remained nothing more than a simple if sizeable refuge, without economic central functions. The more or less artificial bishop's see was already abandoned in the same century.

Detailed studies of the numismatic finds from Quentovic and Dorestad have demonstrated that every site had its own development cycle with peaks and declines that do not correspond.[108] So local causes must be assumed for these changes. The fact that the landing stages in Dorestad repeatedly had to be extended is proof that the fate of the site was sealed by changes in the course of the river. Excavations at the small trading site of Ralswiek have also determined that local environmental changes led to the slow decline of the site (Pl. 3).

Apart from the many indications in the written sources which attest to aristocratic absorption of wealth from the wics and *emporia* sites in taxes and tolls, no cogent evidence can be cited proving an immediate aristocratic impact that caused the emergence or the decline of these sites. Rather they must be interpreted as decisive links in the dynamic development of post-Roman town structures not directly organized by the noble upper class.

This aspect seems to be especially important when it comes to defining the special traits of post-Roman town development. Already in the early 1990s Adriaan Verhulst proposed separating a special type of town that emerged in Carolingian times. In contrast to the old Roman *civitates*, and the *emporia* and wics, he called them "new towns", on the basis that this was the first time that these settlements will have been centers of local exchange with the immediate surrounding countryside.[109] Neither Roman traditions nor long-distance trade were the prime force behind these forerunners of the later communal town. This view was significantly shaped by an opinion based on archaeological evidence that postulated a nearly total disappearance of economic town life in the Merovingian period, aristocratic foundations of "Carolingian" *emporia* and wics and their exclusive dedication to long-distance trade in luxury goods, as well as a unique technological contribution by manorial institutions to a rise in productive efficiency as the backbone of the "new towns".

However, analysis and reevaluation of the archaeological record now reveals that these archaeological premises are no longer valid. So new conclusions must be drawn:

Post-Roman town development in the first Millennium is characterized by the rivalry of two models of urbanity. The one – I would call it the "early European town" – emerged immediately after the fall of Rome and experienced a first blossoming in the re-established ruins of old Roman cities and fortified central settlements approximately until the end of the Merovingian dynasty. It was supported by sound trade and exchange activity, and by craft and agricultural production, which were controlled by aristocratic power only to a small extent, if at all. Depending on the degree of aristocratic control, the basic

108 Coupland 2002.
109 See recently: Verhulst 2000.

traits of the model may have varied, and it cannot be excluded that the re-establishment and enforcement of aristocratic power may have led to a significant transformation at the end of the period, leading even to particular settlements completely losing their character as early European towns. The rising power of the Carolingian dynasty must have caused such transformations at least, if not even deeper ones, and these changes found their ultimate expression in the decline of the old *civitates*. The epoch is further characterized by a widespread, serious attempt to reactivate a town model that was rooted in past European history, and had counterparts in contemporary neighboring regions (Byzantium and the Caliphate): the "planned city" under aristocratic control, with the monastery as its best and most typical exponent. This "social experiment" imposed by the Carolingian dynasty was accompanied by the establishment of harsh social relations in the rural sphere. This rural power system, which must have had a more than problematic effect on agricultural efficiency, became increasingly important for the framework of urban organization. Needless to say, the rural problems were now transferred, and thus became problems of urbanism. But the principles of the early European town did not disappear. We certainly have to interpret the sudden rise of "mushroom-towns", especially in the poorly-controlled coastal areas with their vital contacts to "non-manorial" (in the bipartite sense) societies in England, Scandinavia and the Slavs, as a kind of compensation for the Continent's loss, as an attempt to avoid the (short-lived) triumphal procession of the Carolingian manor.[110] I believe, however, that the early European town survived, albeit with wounds and defects, within the Continent as well. This model was now something like the "part of *Centula*-St Riquier invisible in textual references", and included a broad and colorful spectrum of settlement types with urban functions, even suburbs of palaces and monasteries, etc.[111] Neither Roman tradition nor topographical situation were decisive for the label "early European town". It was above all the degree of self-determined and self-managing activity by their inhabitants, traders and craftsmen that accounted for this characterization. The decline of the *curtis* system of the Carolingian manor after AD 900 led to the reemergence of the positive properties of the early European town. Old *civitates* flourished once more, and each urban settlement had the chance to turn back and to continue along the path that had been begun shortly after the decline of Roman power. Some proceeded faster, others more slowly, depending of how near or how far away aristocratic power structures were.

110 For the long-lasting dominance of partly dependent but self-managing small holdings (hides) in Anglo-Saxon England, and the late, slow spread of the corveé on the demesne's land at the end of the late Saxon period shortly before the Norman Conquest (AD 1066), which only then brought a sudden upturn for this particular variation of manorial structure, see: McGovern 1972. On the decisive role of cross Channel and Scandinavian trade with the "northern people" and the continental (non-manorial) coastal societies (esp. the Frisians), which started in the Merovingian period, see: Lebecq 1997, 71-78; *idem*1998, 202.

111 No doubt the gradual transformation of the monastic manor at the end of the early Middle Ages had a growing impact upon the rise of European towns. See: Nikolay-Panter 1989; Irsigler 1989.

6. Conclusions

We can readily agree with Richard Hodges when viewing the role of Carolingian monasteries as the "light in the Dark Ages",[112] as long as it is classical knowledge of writing and similar cultural achievements that we mean. However, if we are referring to the economy and to innovative impulses for town development, an important addendum is required: in order to shine so beautifully in the so-called Dark Ages it was necessary for the light to be turned off first. And this was done nearly perfectly, mainly by the monasteries forcibly supported by the ruling, and therefore no less shining Carolingian dynasty. They certainly did not do it intentionally. But it was an unavoidable effect of the construction of a network of power and authority never seen before in post-Roman Europe. The true keepers of the light of urban economy, of the corresponding settlement and production structures with a promising future, looked truly much less impressive, and were all but shining: They were the traders and craftsmen who lived in *emporia*, in wics, in old Roman towns and in all sorts of settlement agglomerations, including those in the shadow of abbeys and the palaces of the mighty. These offered at least small niches for self-determined action, for free market activities, and for craft production for unknown consumers, in spite of the burdens resulting from the constant absorption of earnings through tribute, rent, tax and tolls to the omnipresent manorial system developed by the Carolingians. The gradual decline of this system after AD 900 triggered forces that were largely enchained, yet had continued to exist and act throughout the previous period. The path of the post-Roman European town started early and long before the age of the *emporia* and wics began. It reached its first peak in the early Merovingian period, soon after the destruction connected with the fall of Rome in the West. These beginnings then had to weather the difficult storm of the Carolingian display of power, and of the ultimately unsuccessful experiment of creating economically autarkic town-like units to the disadvantage of a dynamic economy. Archaeological evidence for craft working suggests that the decisive upturn in the curve of the development of the early European town did not occur until the tenth century, and thus would make the period between AD 900 and 1100 the eve of the medieval commune.

112 Hodges 1997.

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Where do trading towns come from? Early medieval Venice and the northern *emporia*

Michael McCormick

The history of towns in the first millennium of our era is changing. It is doing so under the impact of two independent but convergent developments in scholarship. First, archaeologists are producing awesome increases in usable data about the economy – trading, craft, and agrarian – of the Mediterranean world, and its nearer and further hinterlands. Secondly, the possibility is dawning that, however delicate, common threads of connection and communication linked, directly or indirectly, continuously or sporadically, regions from end to end of the former Roman world, and beyond. Even when links are lacking, the fertility of a comparative approach seems obvious. Expanding horizons are forcing us to stop thinking about the "death of ancient towns" and the "origins of medieval towns" as separate, unconnected phenomena. Rather we are beginning to consider the history of towns on a broader scale, in terms of cycles of expansion, contraction, and renewed expansion across Western Eurasia and Northern Africa. This in turn invites us to consider those cycles of urban contraction and growth as part of larger cycles of economic expansion, contraction, and renewed growth, and to wonder whether chronological convergence is coincidence, or causal.

In Northern Europe, knowledge deepens of the small but effervescent *emporia* of the North Sea, tiny points in a system which grew to extend far into the Baltic, and deep into the Continent, along the still under-explored river ports of Europe. In the south, archaeologists have begun to investigate the origins of Venice.[1] I have argued elsewhere that around 800, Venice came to be linked to those northern trading towns or *emporia* through its contacts with the Frankish empire. Now is a good time to ask anew the old question, where do trading towns come from, and to do so about Venice, against the backdrop of our expanding knowledge of the northern *emporia*. This is not to say that Venice is the archetype which explains all. It was, however, an important place where, thin though it is, the written record sets in earlier and thicker than in the northern sites. This relatively privileged source situation allows us to consider the early medieval reality from the equally revealing perspectives of material and written evidence. The

1 See most recently, Ammerman in press.

specific case of Venice offers some interesting questions which may have resonance beyond that one place, and suggests that the phenomenon of new, non-Roman trading settlements identified as "wics" was not, in fact, limited to Northern Europe.[2]

Let it be said immediately that there need not be a single model for the origins of the early medieval trading towns. Each case may well be unique, or they may cluster in historically linked groups. Nevertheless, some may share certain features. And where the *emporia* differ can be no less illuminating than where they are the same. This can only become clear by a comparative investigation. Before that, however, three conceptual issues need clarifying: evolution, origins, and systemic context.

Our own experience of life should caution us against the seductive simplicity of monocausality. Even on guard against oversimplification, we historians nevertheless err in obvious ways. Our notions of causality are often superficial and sometimes seem to have advanced little beyond the medieval rethinking of Aristotle and his material, final, and other causes. One powerful model which takes us beyond the medieval logicians comes from evolutionary biology. There is much to be said for considering historical development as a pattern in which multiple sequences of random changes accumulate and interact, until the number and interactions of the random changes reach a critical threshold and provoke a swift and fundamental reconfiguration of the pattern, or system. This is what some theorists call "self-organizing criticality".[3] The classic analogy is the movement of grains of sand in an hourglass. They pile up in a tidy little hill until at some point, the mound collapses and reconfigures into a new hill shape. The model invites us to be alert not to one "cause" or, more neutrally (but perhaps less frankly), to one "factor", but to seek out multiple causes, and to recognize that critical changes could come swiftly, and need not result from some "big" cause.

The second point is that "origins" is a process, not a single point in time. If we think in terms of random changes reaching a critical threshold and provoking a fundamental reconfiguration of a place's economic and human structures, the "origins" may have occurred in multiple stages. Simple as that sounds, it has important consequences for our historical investigation. The long-term development of trading towns did not happen overnight, but critical reconfigurations may have almost done so. As the emerging entities themselves began to take new shapes, the environment in which they existed also

2 Hill 2001b, whose stimulating essay and effort at definition prompts this observation. Richard Hodges' gazetteer of early medieval trading sites has been updated by Cowie/Kemp/Morton/Wade 2001, Hill/Bailey/Gardiner/Griffiths/Holman/Parfitt/Perkins/Riddler 2001, and Hill 2001a, although the last has some inaccuracies.

3 The expression may appear opaque but it is sufficiently widespread and precise to warrant use. "Criticality" is borrowed from nuclear physics, and designates "the state or quality of being critical" in the technical sense of mathematics and physics, that is "constituting or relating to a point at which some action...or condition passes over into another". Both definitions from the *Oxford English Dictionary* (online) 2nd edn, 1989, accessed February 1, 2005.

continued to change, and more random variants continued to accumulate. The key point here is twofold: causes operative in the first two decades of a trading town's emergence may have been different from those that operated in the next 20 years, and again totally different factors may have come into play in the third 20-year period (to choose an arbitrary chronological signpost). Factors that, in the first 20 years or so of its existence, were absolutely crucial to precipitating a prototown, could cease to operate or shrink to relative insignificance in the next 20 years of development. To illustrate this idea with a hypothetical example, one could imagine that a group of families settled on a particular point in a particular lagoon in 600 A.D. because of the combination of security from mainland turbulence and the abundance of fish in that part of the lagoon. Let us call it "bay X". Twenty or thirty years later, that part of the lagoon may have been fished out, but the aging population was not inclined to pick up and move to another location: they still enjoyed security even if the threat had diminished, they had developed some good salt pans and garden plots, and they had become attached to graves of children and parents that they were reluctant to abandon. Yet – this is the second aspect of recognizing that different causes played different roles at different times – the obsolete causes which had once militated for a settlement growing up on bay X, as opposed to bay Y, nevertheless continued to exercise their "founder's effect". Recognizing that the process was long and changing does not release us from the responsibility of identifying the moments of accelerated change, and asking what lay behind those moments.

Thirdly, we need to understand the – equally changing – systemic contexts of which the new trading towns were an integral part. One can usefully distinguish microsystems from macrosystems. Especially in their early stages, the new towns emerged from a microsystem, the productive capacities and needs of the nearby regions which surrounded and in some sense, spawned and nourished them. What is more, trading towns never ceased to interact with the local microsystems out of which or against which they had emerged. A very interesting appraisal of the food and, in particular, the meat consumed at Birka, a small trading town, estimates that feeding its permanent population of 500 or 600 people would have occupied (at least) a hundred out of the surrounding 2000 or 3000 farms. If a similar number of farms were required to provide the other foodstuffs consumed at Birka, one might estimate that even a relatively small trading town could consume the production of a tenth or so of its hinterland.[4] In any event, just as the surplus food production of farms in an early town's hinterland made possible the concentration of food consumers such a town supposes, so the very

4 For these figures concerning the Mälaren basin: Wigh 2001, 136-139. The kill patterns suggest that pork came from pigs kept on the small island itself, while beef came from dairy cows raised in the farms of Birka's Mälaren hinterland. I say "at least" because Wigh's source, Broberg 1990, 114-115, states that he is reckoning from the estimated total production of his Uppland farms, so that one needs, apparently, to add the food needs of the farmers themselves.

emergence of that concentrated demand ought to have worked its own further effects on the microsystem of farms and producers.[5] We also need to look beyond the excruciatingly local circumstances of each new town. Most of the centers we know most about right now have stood out because they were part of one or more macrosystems of interregional and even intercontinental links, and so attracted archaeological notice for the density and exceptional character of their material remains.

What insights, what questions do the origins of Venice offer for the broader question of where trading towns came from in the early Middle Ages? This essay will concentrate on three major points: Venice was certainly not founded by a king; Venice by itself was nothing; at Venice the tempo of growth and the geographic structures of trade probably changed quickly, even within a space of decades.

The first lesson we can learn from Venice is that it was not founded by a king. No Byzantine emperor, no Lombard or Frankish king created the new trading town in the Po delta. It emerged, more or less spontaneously, precisely in the margins beyond kingly or imperial control, in the second half of the eighth century. Certainly, the early settlements that coalesced into eighth-century Venice incorporated elements which had once enjoyed some sort of imperial or other administrative sponsorship and support. The seventh-century Byzantine exarch's inscription from Santa Maria Assunta, Torcello, as well as soundings there and on other islands hint that preexisting elements were incorporated into the fabric of Venice.[6] But the fact remains that the trading settlement of Venice did not result from the policy decision of any ruler.

Only once Venice and its significant wealth had appeared did it attract enormous attention from the most powerful rulers around it, the Frankish and Byzantine emperors. The effort to control Venice came *after* the town had emerged as a significant commercial center.[7] This fact invites us to consider anew our frequent assumption that towns of the north always owed their genesis to royal initiative. In the first place, the very notion of "founding" a trading town in an economically and politically meaningful way seems to assume that early medieval rulers could exercise considerably more power than many historians would allow them in other aspects of royal action. One could even argue that these rulers' limited ability to intervene beyond the surface of

5 On this issue in general, see Horden/Purcell 2000, 89-122, and, with respect to our early trading towns, see especially Hamerow, in this volume. The kill pattern suggests to O'Connor 2001 that the Anglo-Saxon wics' meat supply did not come from market exchange. See also below, n. 37, on Wicken Bonhunt's pork production.

6 Inscription: e.g. Carile/Fedalto 1978; Leciejewicz/Tabaczyńska/Tabaczyński 1977; Ammerman/McLennen 2001. The second Polish excavations on Torcello, in 1983, and the recalibration of the ^{14}C dating of organic materials strengthen the argument for the suddenness of development in the area near Santa Maria Assunta in the later seventh century at the earliest, and more probably in the eighth century: Leciejewicz 2000.

7 McCormick 2001, ch. 18.

their tiny economies was a key factor in the early, unregulated and unfettered growth of trading economies.[8]

Of course doubting the decisive role of rulers as founders of every trading town in no way denies their part in firing demand for the goods which traders might supply: rulers assembled greater wealth than their social rivals – that, after all, goes a long way toward explaining how they got to be rulers! They needed to distinguish themselves via conspicuous consumption and also to cement loyalties by gift-giving to supporters. So rulers certainly fanned the flickering flame of demand for valuable goods. No doubt that charisma of differing stripes – prestigious genealogy, military success, personal impressiveness, or religious sanctification – played a significant role in facilitating the rise of particular individuals to power. But wealth was also an essential and indispensable element in successful rulership in the early Middle Ages. Whether their riches came from tribute, booty or astutely managed farms (or most likely, all three), kings who had wealth, had the wherewithal to buy. According to modern models of early medieval rulership and the role of gift-giving in cementing political allegiance, rulers also had the motives to redistribute luxury goods they had bought.[9]

This is not to say that early medieval political leaders were disinterested in exploiting nascent towns. Indeed, the concentration of wealth and exotic goods could not fail to catch the eye of rulers on the lookout for income.[10] But who would maintain that the Frankish kings' renewed interest in royal tolls and customs duties in the second half of the eighth century *caused* the rise of the North Sea settlements? That royal interest resulted from the new trading world; royal toll collectors were reacting to an existing

8 McCormick 2005; Ribe is sometimes cited as an example of a royal foundation because its market was laid out with a regular plan ca. 721-722. But why would it have to be a king, rather than, say, a group of merchants who took this initiative? The large sand deposit on which the identical plots of early Ribe were laid out, not unnaturally suggested a massive labor force such as only an otherwise unknown king might have assembled, e.g., Metcalf 2001. It has turned out to be naturally-deposited drift sand: Feveile/Jensen 2000, 11, n. 3. The royally-controlled coin circulation which Metcalf deduces from the relative frequency of different coin types in "Phase C" of the Ribe Post Office site (720s until at least 746), need not in itself imply royal foundation of the site, even if the coins' local origin is correct and coincident with the very beginning of the town: Metcalf 1996, 404-405. Moreover, the Ribe origin of these coins has been challenged: Malmer 2002, 117-120. Wallace 2001, 42, observes a "regularity of layout" at Wexford, which argues for a "Pre-Norman urban authority", also evidenced at Dublin and Waterford. For a similar note of caution about assumptions of princely policy and the founding of the northern *emporia*, see Hill 2001b, 80.

9 For the Carolingian period, see, e.g. Reuter 1985; cf. the depiction of the acquisitive and distributive mentality of early and later medieval aristocrats in Duby 1978, 48-57, 177-180.

10 McCormick 2001, 640-644.

phenomenon, not creating it. The same is explicitly true of the Danish king Godfrid's "foundation" of Haithabu-Hedeby in 808 with merchants transported from Reric.[11] The king attacked one Baltic trading center, Reric, which lay outside his political control, and forcibly transferred its population to another, at Haithabu, some 150 km to the northeast as the crow flies, in an area under his thumb. Godfrid was not merely trying to satisfy his own desire for personal access to the goods traded in such a place. As the well-informed witness from Charlemagne's court milieu perceptively notes, Godfrid wanted the tolls on the trade, that is, he was seeking to take control of profits from a trading center and system which already existed in his region. The royal intervention of 808 may well mark a new stage in Haithabu's development as a trading town. But no one today would maintain that it started that development, when the archaeology detects a specialized trading center at least two generations earlier, in the first half of the eighth century.[12] So too in those same years, Charlemagne and the Byzantine emperors fought each other to take control of Venice, about two generations after Venice had emerged as a significant trading center.

All of this confirms that, in the unevenly documented evidentiary context of early medieval Europe, the appearance of written records about a trading town naturally need not, and probably, often does not coincide with the origins of that town. In fact, this is likely true even in the better recorded history of later medieval cities, where Thorsten Westphal's work is now forcing us to situate the documentary appearance of new towns *after* their physical emergence, as fixed by dendrochronological data.[13] This observation will pose no problem for archaeologists, who know that Hamwic, Dorestad, Haithabu, Ribe, or Birka had already appeared as distinctively different from the surrounding countryside decades before the written records mention them. However the appearance of the new towns in writing is itself a doubly significant phenomenon. It indicates that the settlements had become so important that they forced themselves on the consciousness of aristocratic religious witnesses who were not necessarily disposed to observe or record them. That is, the trading towns had now reached a new threshold of significance that surpassed the awareness of the human milieux directly involved in them. Secondly the earliest mentions come mostly in historical records, as opposed to contracts and the like. In the early Middle Ages, historical recording is often and intimately connected with rulers, whether they be local rulers and their courts, like the bishops of Rome or of Reims, or more ambitious ones, like the kings of the West Saxons or the Franks.

11 Likely to be identified with the trading site at Gross Strömkendorf (just north of Wismar), some 150 km distant, as the crow flies: see Jöns 1999 and Tummuscheit 2003 with further references.

12 See, e.g., Jankuhn 1986, 85-87; now the remains of a jetty in the central area previously thought to have been settled mainly in the ninth century, also have been dated dendrochronologically to ca. 725-750: Crumlin-Pedersen 1997, 68; cf. Jankuhn 1986, 79-80, 87.

13 See Westphal 2002.

We tend to get contemporary historical mentions of the early trading towns when they impinge on the consciousness of a ruler and his associates, and so break through the blinders that kept so many contemporary writers from committing to parchment aspects of their economic experience.[14] But simply recognizing this fact – that the early trading towns appear in written records after they have already come into existence, and that that appearance coincides approximately with their entering the consciousness of a ruler – only reinforces doubts about royal intervention at the earliest origins of every trading town.

In this respect, the *approximately* contemporary presence of a certainly royal or princely site close to a trading center does not in itself prove royal foundation. Such an approximately contemporary royal site could just as plausibly shed light on royal demand for goods from the *emporium*, or indeed, on a king's efforts to control and tax the wealth that had already started accumulating in that trading center. We need to consider how, archaeologically, one could prove that the initiative for creating the trading center came from such a royal site. The apparently royal manor across the channel from Birka, the fortified height above Haithabu or, near Venice, the Carolingian county of Treviso, can all be imagined as adaptations of a pre-existing royal institution to a new function of exploiting a nearby trading center that had recently sprouted up for reasons largely independent of that royal site's existence.[15] This does not mean that no trading towns were born by princely initiative. But it is at least worth examining whether the "bipolar" configuration of *wic* and royal site sometimes had more to do with rulers' recognition of previously established commercial facts on the ground, than some kind of early medieval industrial policy.[16]

If we challenge what one might be tempted to call the "*reges ex machina*" explanation for at least some of our trading villages, where indeed did they come from? A big part of the answer lies in location. Location can be understood in two ways, in terms of a physical location of transition, such as might stem from the ecology, communica-

14 On these mental blinders, see McCormick 2001, 12-15.

15 For the identification of the royal site on Adelsö across the channel from Birka, Clarke/Ambrosiani 1991, 75-76, and, for the royal founding role, *ibid*., 89; the Haithabu hill might have been a refuge for the early settlement: Jankuhn 1986, 87. Treviso was the mainland site to which Venetian aristocrats fled when they sought Carolingian royal protection: e.g. Krahwinkler 1992, 216-217; in 863-864, Eberhard, margrave of Friuli and therefore responsible for Frankish administration in Treviso, established his will at Musestre, which he calls "*curtis nostra*". It was in the royal domain of his son Berengar in 922, and Otto I granted it to the doge of Venice; *ibid*., 261, n. 81; cf. 257, n. 63. Musestre is 10 km from Torcello.

16 Thus, although the stimulating discussion of Hodges 1989, 52-56, lays great emphasis on the role of kings in the rise of the *emporia*, he notes that it represents a development from an earlier phase of largely hypothetical, though very plausible, sporadic, coastal fairs. For Sandtun, in Kent, a coastal site marked by imported ceramics and whose dietary evidence indicates seasonal occupation, see Palmer 2003, 55.

tions infrastructure, or political structures; and in terms of systemic location, that is, place within a web of economic relations. Like many other early medieval trading *emporia*, Venice coalesced in a zone of ecological transition. Situated on the sea edge of a great river delta, it was backed by the fresh or brackish water of the lagoon; in front of it flowed the salt water of the Mediterranean which here, exceptionally, was tidal. It shared a brackish water site with Birka, whose sea inlet only later became a lake, and with Haithabu's Schlei.[17] Venice also stood at the edge of two or three different transport infrastructures: like Haithabu, Ribe, Dorestad, or Quentovic, Venice was an obvious link between the sea and inland transport, whether by road or river.[18] And finally, Venice at its birth lay on the political frontier between the Byzantine coastal enclaves and Lombard and later Frankish continental dominion. Although they perhaps lacked the autonomy that specially characterized Venice, Haithabu and Dorestad were not far from a frontier. Haithabu stood in the southern margins of Danish dominion and hard by the Danevirke, close to the Saxon, Slav and Frankish polities, while Dorestad was on the edge of the last part of Frisia to fall to Frankish arms.[19] The Anglo-Saxon

17 The modern sea level at Birka is approximately 5 m lower than in the Viking age: e.g. Ambrosiani 2002a, 7-10.

18 Haithabu lays just off the north-south road axis of the Jutland peninsula, the Heerweg/Hærvej alias Ochsenweg/Oksevej; Crumlin-Pedersen 1997, 193-194, argues that the 500-600 kg wine barrels from the Carolingian empire recovered at Haithabu were shipped there by wagon from Hamburg. Although exactly where and how western travelers may have reached Haithabu from the North Sea by boat and portage on the (possibly different) course of the medieval Treene is not as clear as once believed (*ibid*., 37-39), the most recent excavations and soundings hint that shipping activity at Hollingstedt may indeed go back to the ninth century: Brandt 2002. For the suggestion that Ribe too lay at the point at which a coastal road crossed the river, on the edge of the coastal complex of marsh, sandy heath and mud flats, see Madsen 1997, 470; for its connections with road transport in the later Middle Ages: Poulsen 1999, here 204-206. Dorestad was of course a river port, on a branch of the lower Rhine, en route to the sea. For Quentovic, 3 km from the Roman road between Boulogne and Amiens, see Bruand 2002, 86.

19 On Haithabu and Danish control, see Jankuhn 1986, 53-55; the *Annales regni Francorum*, a. 808, ed. F. Kurze, MGH, Scriptores rerum germanicarum, Hanover 1895, 126 describe the Danevirke as defending the Danish frontier: "*vallo munire limitem regni sui, qui Saxoniam respicit*". For the territorial expansion of Frisia and the Frankish conquests, Lebecq 1983, 106-117, with fig. 23, 113. The Danevirke is a complex of massive defensive works, no part of which can be identified unambiguously with Godefrid's defensive building. The first elements seem to date from the second half of the seventh century or ca. 700, and one subsequent major phase (Phase IV) is securely dated to 737; the next, fieldstone wall, Phase V, is of uncertain date, though soon enough after Phase IV that the latter's timber structures were still intact (unless one construes the timber structures as an integral part of the fieldstone wall, which would then date the wall to 737, cf. Andersen 1998, 229). After that, there is a hiatus in construction until the German threat reemerged in the tenth century. All of this makes Phase V the most plausible candidate for Godefrid's wall. See Andersen 1998, 205-209.

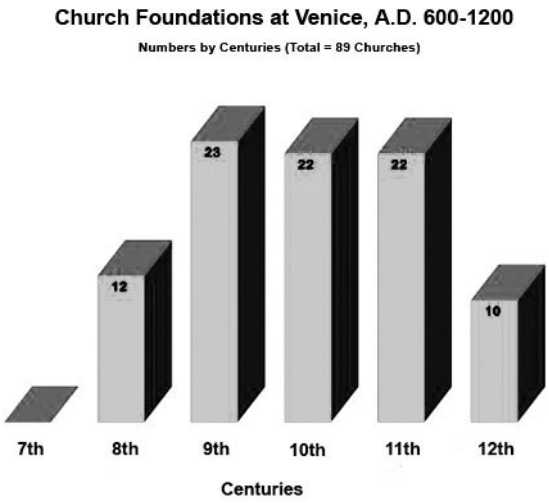

Fig. 1. This chart suggests the sudden surge in church building at Venice in the eighth and ninth centuries. That the pace was maintained for 300 years testifies both to accumulating wealth and growing population

trading towns of Lundenwic (London), Ipswich, and Hamwic also stood near natural or political borders.[20]

Others have of course noticed this. But perhaps we have not insisted enough on its implications, the second great lesson of Venice, that of systemic location. We know little yet of how Venice connected with the microsystems of production in its near hinterland. But as far as the macrosystem is concerned, it is already obvious that Venice by itself was nothing. Archaeology is beginning to elucidate the late antique settlement pattern offshore; what has emerged so far indicates nothing like the trading town of the tenth, eleventh and twelfth centuries.[21] Judging from the written records, and comforted by the recalibrated radiocarbon dating from Torcello, we can see that Venice exploded onto the Mediterranean stage in the second half of the eighth century, when suddenly its merchants appeared operating in places as far from home as Rome, North Africa, and Jerusalem. We can deduce something about the chronology of Venice's accumulating wealth from the pattern of church building there.

These dates (Fig. 1) derive from the written sources and material remains of the churches themselves, but the first few ^{14}C and dendrochronological results have so far confirmed them.[22] It takes considerable wealth to build a church, and it is surely significant that recorded church building jumps from none in the seventh century to twelve

20 Cowie 2001, 17, and noting that this is not true of York.

21 *Ritrovare* 2000; Leciejewicz 2000.

22 The chart is based on the catalogue of churches in Dorigo 1983, 2: 494-495, Prospetto 28. ^{14}C dating of the wooden substructures has been published for two of the 23 churches assigned to the ninth century, and confirms the written records for the first basilica of St Mark, and the early ninth-century building of San Lorenzo di Castello: De Min 2000, 41; cf. for early dendrochronological results: Martinelli/Pignatelli 2000, 153.

churches in the eighth, and then nearly doubles, to 23 new churches in the ninth century. No less remarkable, church building maintains that high level of intensity for the next two centuries. Although we may expect that ongoing excavation and increasing dendrodata will correct and add detail to this rough image, the basic trend of accumulating wealth appears clear. What is more, the founding of a new church on average every four or five years for 300 years offers more than just a crude index of wealth. The new churches signal in some approximate way the increasing population of Venice.[23]

Only in the later medieval stages of its development did Venice and its population grow great enough to constitute an important market in itself. Venice originated as a trading town not because of its own demand, but because of its systemic location. Venice connected other centers of demand, some of which were quite far from Venice, and many of which were as new as the communication networks that linked them. It may have been growing slowly in the obscurity before 750, but growth and commercial activities unmistakably accelerated in the later eighth century: Venice crossed a new threshold in the age of Charlemagne. And it did so because it was on the way to somewhere else, because it connected other, greater markets. To understand the growth of the new trading towns, in other words, we must look beyond them, and discover the markets they served. This is especially challenging, and especially important in an age of low population densities such as we may imagine in contemporary Western Europe. What is more, insecure though the specific figures may be, there should be little argument that population densities must have varied greatly across the continent, from very low figures in Scandinavia, particularly Norway, to considerably denser – perhaps ten to twenty times denser – in the most intensively farmed and fed areas of the Carolingian empire, such as the Seine basin around Paris, or Flanders' richest alluvial soils.[24] Small

23 The more so since Dorigo 1983, 2: 494-495, Prospetto 28, identifies the overwhelming majority of the churches as parishes, that is, as serving the spiritual needs of the urban population, even if the parochial organization itself should be more recent.

24 Benedictow 1996, 179-182, reckons that medieval Norway has the best data in Scandinavia. He estimates that, around 1050, the total population of Norway within its larger, medieval borders may have reached about 185,000. Using the figures he gives for the land mass of modern Norway (307,860 km²) – 27,500 peasant holdings with ca. 5.5 persons per holding plus his estimate of 1 % non-farming population, i.e. a total of 152,775 persons –, yields an overall density of two persons per km², three centuries after the first appearance of the *emporia*. With Benedictow, one would suspect that the population was larger around 1050 than around 750, even considering the substantial Scandinavian emigration since the ninth century. Overall population estimates for the Carolingian empire range today from ten to twenty million, including the Italian territories. The size of the Carolingian empire can be roughly estimated at 1,112,000 km², which yields a hypothetical density ranging from ca. 9 to 18 inhabitants per km². For the size estimate, see McCormick 2007, n. 21. The most carefully grounded demographic estimates of Carolingian population density concern regions documented by the polyptychs. Vleeschouwers-Van Melkebeek 1977 deduced for one village a density of 34 persons per km². Schwarz 1985 estimates varying densities between 13.14 and

wonder that lightly settled Norway has so far only yielded the small trading site of Kaupang.[25]

The archaeologically stimulating and informative elements of common material culture and obvious links among the northern "wics" have made them the chief focus of investigation. In economic terms, that is insufficient. Surely relatively few of the goods imported to the *emporia* dead-ended in the *emporia* themselves: they must have been en route to somewhere else, outside the trading towns, or the *emporia* would have collapsed economically. What those somewhere else's were, how local markets and end-users connected to the *emporium* is the next big challenge in understanding the birth of the new trading towns.[26] The trace elements which should track the movement of wealth into and out of the trading places are well known, and they have begun to sketch a crude map of the circulation of goods: ceramics and coins, of course, but also glass, bronze or other metal work, Rhenish lava millstones and even textiles.[27] The

30.93 persons per km², and emphasizes that these figures are but an approximate order of magnitude. Derville 1998, 504-507, in a rapid but suggestive approach distinguishes population densities of Flanders, ca. 850, according to soil types, i.e. agrarian productivity, and arrives at what he reckons optimistic averages ranging from 20.8 inhabitants per km² on rich alluvial land to 2.6 per km², and a combined average of 16.34 inhabitants per km²; the eight villages with the richest soil reached 36.64 inhabitants per km², which he thinks about equivalent to the villages in the Paris region enumerated in the Polyptych of St Germain des Prés. A better household multiplier would yield what Derville reckons a more plausible average density of 12.71 for all of Flanders. For St Germain des Prés, Lot 1973 (1921), 481-490, calculated a base population density of 26.7 or 29 inhabitants per km², to which he added controversial corrective percentages, to reach 34 or 42 inhabitants per km²; the alternatives depend on the size one assigned to the abbey lands. Cf. the critical assessment of Ménager 1965. Renard 1999, 412 and esp. 426-427, emerges from a careful study of the St Bertin polyptych to deny the possibility of demographic deductions, in part because the categories of individuals counted there for their service obligations (but not named) may not correspond to residents, or they may be counted twice, and because the gender breakdown of the individuals called *mancipia* is irrecoverable. Nevertheless, even allowing for some possible overcounting, the range of estimated densities for Carolingian Flanders far outweighs that for Norway. For a good recent overview of Carolingian demographic research, see Toubert 2004, 322-332.

25 See the valuable overview of the site, the context, and the finds in Skre/Stylegar 2004.

26 For interesting insights into the consumption of items probably imported through Haithabu to nearby villages, see below, n. 38-39; Skre/Stylegar 2004, 62, makes the plausible suggestion that exceptional burial goods from the area around Kaupang entered the region or were made in that *emporium*.

27 On coins and ceramics, see the examples cited below, n. 36-37. Glass includes both vessels and the ubiquitous beads: see, e.g. Stiff 2001 and, for beads, particularly with respect to Venice's Danubian hinterland: Callmer 1991; Blackmore 2001 conveniently summarizes the types and history of the main export wares. For one difficulty in tracing the distribution of cast bronze objects, see Carlsson 1988. On lava querns, see below, n. 38-39. On the promise of textiles, see Jørgensen 1987; cf. Hägg 1999.

written record depicts princely courts and wealthy churches as the end-point of indubitable long-distance and very high value imports, such as silk and spices.[28] Written sources also indicate we should look to more modest river ports and periodic markets of varying types for the further transmission of goods which transited through sea-linked *emporia*.[29]

Archaeology has begun to help here too. For instance, the important Danish site on Lake Tissø might combine a princely site and a periodic market.[30] It has so far shown no sign of agrarian activity. But it boasted an exceptionally large hall, some kind of a shrine, many pagan amulets, and even sword sacrifices in the nearby lake, the etymology of whose name identifies it as Tyr's Lake, one of the Scandinavian gods of war. Workshops and market areas have been identified just north and south of the hall and shrine area.

The excavators think Tissø may have been a princely residence and pagan religious center between the late seventh and the ninth centuries, and that it was occupied only at certain times of the year. Their work shows us trading goods reaching a princely and religious site which may also have been a periodic market. Long-distance contacts are proven by the presence of Frisian or Anglo-Saxon sceattas, as well as Carolingian and Arab coins. The signs of high-status activities in the hall extend beyond finds of weapons and cavalry equipment, for fragments of Frankish drinking glasses have also turned up there. Their excavation in the great hall suggests that the festivities in which presumably they figured were their final destination. One last discovery connects our Adriatic case study and the communications network that linked the Carolingian empire to Scandinavia. The workshop area at Tissø produced yet another exemplar of the seal of Theodosius Baboutzikos, a high Byzantine official from Constantinople who spent a year in Venice, working to strengthen his empire's military posture against the Arabs, and who, in the course of that mission, in 840 or 841, traveled to seek armed help from the Frankish emperor's court. Theodosius' previously discovered seals were excavated at Haithabu and in Ribe's market place. The Byzantine's office was normally in charge of war equipment, and it is hard not to surmise that his northern dispatches involved warriors and sailors for his empire's hard-pressed army and navy.[31] Whether Theodosius sent the three documents which these three seals once authenticated north

28 E.g. McCormick 2001, 708-716 and 719-726.

29 E.g. McCormick 2001, 778-781, for the links between Venice and Po river ports. Early medieval craft and port installations have recently been discovered at the confluence of the Sambre and the Meuse rivers at Namur: Plumier 1999 and Vanmechelen/Mees/Robinet/Plumier 2001; see, in general, Suttor 1998. For a seventh-century ship which specialized in Charente river and local coastal transport, see Rieth/Carrierre-Desbois/Serna 2001.

30 Jørgensen 2003.

31 McCormick 2001, 227, fig. 8.1 and 920, R455; Stiegemann/Wemhoff 1999, 1: 376, VI.79; Jørgensen 2003, 203-204, where the find spot may indicate that the little lead object was on its way to being recycled when it was lost or discarded. The suggestion that Theodosius was looking for war supplies in Scandinavia seems difficult to sustain, given the logistical difficulties their bulk transport to the Mediterranean theater would have entailed.

from Venice, or from the part of his mission which took him onward to the Frankish empire, they provide the first indubitable material link between someone who traveled through the new *emporium* on the Adriatic and those of the north.

Until very lately, the presumed lack of permanent structures made periodic, especially rural markets seem destined to remain invisible, although their economic significance in regions of low population density is obvious.[32] However, the surge in metal detecting and astute efforts by archaeologists and authorities in some countries to work with those who practice it (some of whom will use their metal detectors whatever the laws may be) is yielding startling insights into "productive" sites, that is, fields and other places in which weekend hobbyists are turning up substantial quantities of early medieval metal, including coins.[33] Certain sites in Britain have proven remarkably "productive" of metal finds. At least there, for the late seventh to the late ninth century, more intensive scrutiny of "productive" sites is expanding the plausible ranges of explanations, beyond cemeteries, that can be offered for the unusual concentrations of coins and metal. These explanations offer new light on where goods went that transited through early trading towns.[34]

In East Anglia, two metal-rich sites on communication routes share ceramic imports from the nearby *emporium* and pottery-production center of Ipswich. One, Barham, has been tentatively identified as an estate center; the other, Coddenham, may have been a

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32 de Ligt 1993 uses the written sources to make an excellent analysis of periodic markets in the ancient world, and offers abundant lessons for their study in the early Middle Ages. On rural markets in northern Italy, see the important study of Settia 1993. For a stimulating, if largely hypothetical, reconstruction of a network of Carolingian rural markets south of Paris, see Bruand 2002, 282-285.

33 Archaeological arguments against "wild-cat" use of metal detectors are strong: coins provide invaluable dates after which a deposit and context likely occurred. Once detector operators remove them from their archaeological context, their testimony is truncated and disturbed. On the other hand, there appears to be a correlation between the productivity of sites under metal detectors and deep working of the soil which will already have disrupted and even destroyed the archaeological context: that is, many finds may occur only after a site has been significantly damaged, archaeologically speaking. For the seeming correlation of plowing, especially sub-soil plowing, and successful metal detecting, see Richards 2003, 158. Furthermore, metal detectors are likely to exercise their hobby regardless of sanctions, and the result of failed repression could well be clandestine removal of these archaeologically precious indicators. The pragmatic legal and archaeological compromises worked out in the United Kingdom seem to make the best of a bad situation by encouraging prospectors to register their finds. Thus 39,346 objects of all periods were recorded under the U.K.'s Portable Antiquities Scheme for the twelve months from October 1999. The 1,788 finders represent only 6 % to 14 % of the estimated 13,000 to 30,000 metal detector operators active there: Pestell/Ulmschneider 2003a, 3, n. Even with this reporting rate, the results are transforming our vision of Britain's early medieval countryside, as the reports in Pestell/Ulmschneider 2003b make clear.

34 See especially Palmer 2003.

religious estate center or a minster, a rural religious community of aristocratic foundation. Coddenham has produced a number of sceattas, forged and authentic Merovingian coins, and a Visigothic coin, as well as a folding balance, a find pattern which might well evoke a market.[35] The particular, often worn coins detected at some of these productive sites may hint that they were secondary receiving sites of coins which had entered the region through the nearest *emporium*. Other coins found in the sheep-raising regions of Oxfordshire and Dorset might reflect direct purchases of wool by merchants using Frisian money, around the middle of the eighth century.[36] An apparent meat-producing site at Wicken Bonhunt seems to have received Frankish pottery from London, some 55 km distant, as well as Ipswich ware, produced some 60 km away.[37] On the continent, Haithabu looks less like a distribution center and more like an end-user site for lava millstones imported from the Eifel region in Germany. Nevertheless such millstones occur in at least three other sites in its near hinterland, and they could well have traveled through the *emporium*.[38] One of them, Kosel, was resettled in the ninth century, after a long break. Its Rhenish lava querns are flanked by an array of other imported wares, including Tating and possibly also Pingsdorf ware, as well as northern whetstones. Its numerous sunken huts indicate considerable weaving. There is no sign of farming, though stock-raising could not be ruled out. All in all, it seems plausible that Kosel's imports reflect a special relationship with Haithabu, perhaps as a center established to supply textiles to Haithabu.[39]

Certain sites which have proven rich in coins and other metal objects lack any visible sign of permanent buildings. They are the most intriguing of all. Some may be the periodic markets mentioned in the texts.[40] Others, especially those which yield metal *styli* or show signs of executions, may point to meeting places for administrative activity.[41] We know that early medieval societies assembled in local venues for court or deliberative proceedings; the normal way of drafting such documents as might emerge

35 Newman 2003.

36 Metcalf 2003, and 41-47, for the seemingly anomalous prevalence of "porcupine" sceattas believed to have been struck in Frisia, at inland sites, and the hypothesis of direct long-distance trading connections.

37 Palmer 2003, 54.

38 Schön 1995, 101-103, as well as 97, Abb. 37 and 134, Fundliste 6, nos. 21-23, at Schuby, Kosel and Süderbrarup, as the crow flies some 6, 12, and 20 km from Haithabu, respectively. Schuby is on the Heerweg (above, n. 18); the other two are on streams that empty into the Schlei.

39 Thus Meier 1992.

40 Thus, possibly, Royston: Blackburn 2003, 28, and Palmer 2003, 54; near Winchester: Metcalf 2003, 54; Lake End Road near Maidenhead: Palmer 2003, 55, which, though it has yielded lava querns, imported pottery and Ipswich ware, has not yet produced any recorded metal finds.

41 For the idea that *styli* finds might simply signify administrative activity rather than a religious community: Pestell 2003, 135-136; executions: Leahy 2003, 152-153.

would have been to use a metal *stylus* to jot them down on easily portable and reusable colored wax tablets. These slender but weighty metal instruments might be no more than 35 mm long and 2 or 3 mm thick.[42] Anyone who has ever held one knows that they are easy to drop, and hard to spot, especially in grass. Now in a society whose population was spread as thin as that of early medieval Europe, such assemblies concentrated demand, and so would reward merchants' or craftsmen's efforts to market their wares. One wonders whether coins discovered on such sites might not reflect some small-scale marketing of goods as well as, possibly, fines.[43]

For now, the local systemic context, the micronetworks into and out of which Venice's early trade flowed, remain nearly invisible, at least archaeologically. Nevertheless, the texts tell us that Venetians were established in eighth-century Ravenna, and we can suspect, strongly, that Venetians competed with Comacchio's traders along the Po. That suspicion becomes certainty in the ninth century.[44] We would not expect the indispensable Adriatic salt to leave much archaeological trace, and so far the ceramic picture is very incomplete, and unrevealing.[45] Nevertheless the Arab coins which circulated around the Adriatic rim in the eighth and ninth century did percolate up the Po. They surely attest to Venice's impact on its Northern Italian and Croatian hinterlands.[46] It should be only a matter of time before archaeologists are able to discern other, less precious witnesses to that impact, and interaction.

The macronetworks are clearer. By virtue of its ecological and communications liminality, Venice stood at the threshold of different cultural, economic and political worlds. But in the later eighth century, it was not the ecology that changed so dramatically. Rather, Venice's threshold situation suddenly located the marsh settlement on the way to somewhere important. As, near and far, very different worlds began to coalesce around them, the Venetians learned how to connect them. Each connection had the potential to produce wealth. Back in the seventh century, turmoil had reigned in the areas to which the Adriatic rim might connect, whether we look to the nearer hinterlands roiled by the wars of Lombard Italy, the dissolving Merovingian empire, the invading Avars, or we look further afield to the epochal struggle between Byzantium and the Arabs. Since the middle of the sixth century, the Justinianic plague pandemic had

42 See, e.g., Lalou 1993, esp. 242. Though they are often a bit longer, for a fourteenth-century *stylus* of this size excavated at York: O'Connor/Tweddle1993, 315.

43 Leahy 2003, 152, notes that many of the coins excavated at Thwing – *thing* means "assembly" in Old English – look as if they had just been struck. From a continental perspective, the assessment of fines or a market could explain the striking of money.

44 McCormick 2001, 778-781; see also Settia 1993, 201-206, for early medieval markets situated along the river systems of northern Italy which Venetian and other Adriatic vessels possibly or certainly visited.

45 Brogiolo/Alberti1999, 24, discerns in this high-status site no archaeological evidence of trading such as the written records would suggest.

46 McCormick in press.

decimated the Mediterranean economy's demographic base, striking precisely through the shipping networks that had woven the ancient economy together.[47] Up the Po valley, the kingdom of the Lombards was just taking shape, as it warred with the Byzantine enclaves along Italy's coasts, and sometimes with itself.[48] On a fine day, the Venetians could see the Alps from the lagoon. Beyond those mountains, to the northwest, the wealthy kingdom of the Merovingian Franks was fracturing into multiple regional polities.[49] That will have done little to encourage the flow of goods and people across new regional boundaries.[50] To the northeast, the pagan Avars were occupying the Danube basin, even as pagan Slavic groups penetrated ever deeper into the Balkans.[51] Both blocked the roads and rivers that had linked Constantinople to the west and especially to Italy.[52] Beyond the Balkans, the distant imperial capital, only a century before a huge population center and tax-driven economic powerhouse, was reeling from an unparalleled series of defeats and dwindled in size, probably for want of water and bread.[53] But, besieged by vast enemy forces on land and sea, Constantinople clung still to existence. Far to the south, on the other side of the sea, the rising wave of the Islamic empire delivered those defeats, and it had barely begun to digest the vast and wealthy provinces of Africa and Asia that it had overrun.[54]

In the eighth century, the constellation changed. The Caliphate stabilized and its societies began dynamic growth across a new economic world stretching from Spain to the gates of India, firing the engines of demand for raw materials, luxury goods, and labor, even as the great plagues suddenly ceased. A new coinage synthesized the gold system of Rome and the silver system of Persia, bringing transcontinental stability and standards to the Caliphal empire's emerging and gigantic economy, or overlapping economies. The magnificent new gold dinars, silver dirhams, and bronze coins

47 See Little in press.

48 See e.g., Christie 1995, 91-101.

49 The classic account is Ewig 1976-1979, 1: 172-230.

50 See e.g., McCormick 2001, 656-663. It would be most useful for a talented archaeologist to use recent research to redraw the map of the changing distribution zones of different ceramic types of the seventh, eighth and ninth centuries, even if only along the Rhine.

51 Pohl 1988, 237-287; on the Slavs, cf. Curta 2001, and on the combined pressure of Slavs, Avars and Bulgars: Haldon 1997, 43-48, and 66-67.

52 McCormick 2001, 67-74; cf. McCormick 2003, 318-319.

53 See Mango 1995, 17, for the cutting of the aqueduct in 626 and its restoration in 767. Magdalino 1996, 18, suspects the impact was less significant, reckons Mango's assessment of some 40,000 inhabitants ca. 750 as very pessimistic, and inclines to a minimum of some 70,000 around that date, before growth began anew. The ongoing survey of the capital's water supply system, the largest and, apparently, most technically accomplished of the ancient world, should clarify the changing capacity of the system, see, e.g. Bayliss/Crow 2002; for the end of the state-subsidized grain supply from Egypt, see McCormick 1998, 113-118.

54 See Kaegi 1991 for the early defeats and, in general, e.g., Haldon 1997, 48-66, 69-72 and 82-84.

circulated from the gates of India to Spain, and beyond.[55] An Arab "green revolution" was about to take root: largely borrowed from the Indian subcontinent, a whole new array of foods and farming techniques would boost food production across these vast lands.[56] From about the eighth century, the capital region of Baghdad and the Persian Gulf experienced rapid economic growth, ramping up demand for labor as well as for luxuries such as fur.[57] Closer to home, the rural economy was stirring in the rich fields of the Po plain and Tuscany, although learned opinion differs on whether the upward trend started before or after 800. Certainly many churches were going up there too and, universally, the ninth-century evidence for the agrarian structures of production has been reassessed in a more positive light.[58] The Po valley's subjugation to the rising Carolingian empire only accelerated communications of all sorts across the Alps, as northern grandees settled in southern regions, pilgrims streamed south toward Rome, or even Jerusalem, and Carolingian coins crisscrossed the Alps.[59]

In the Frankish heartland, three generations of unity, stability and prosperity under the new dynasty fueled demographic and agrarian growth, and an incipient aristocratic demand for the kind of wares that were worth lugging across the mountains. From Alpine source to Atlantic estuary, the winding Rhine itself now flowed under a single political authority. Along this mighty and peaceful artery, commerce and communications sailed – or were towed by slaves – north and south past the Carolingian empire's rich vineyards, grain fields, pottery kilns, and forests. On foot or hoof from Chur, high in the Alps, and by boat from the Bodensee all the way down to Utrecht, that traffic connected the towns of nine bishops who benefitted from the royal reform of the Frankish church, while four more bishops resided up the Rhine's easily navigable tributaries of the Moselle and the Main. The bishops brought new life to their sees; indeed, most of the Rhenish bishops now enjoyed resources enough to build or rebuild their cathedrals, as much a sign of accumulating wealth north of the Alps as it is to the south.[60] Nor was construction and consumption limited to the episcopal towns, since some of the

55 Grierson 1960; for Islamic coins in and around the Carolingian empire, see McCormick 2001, 319-387.

56 See the critical overview in Guichard 2000, 178-184, with further references; Guichard observes (181) that the new techniques were spreading already in the first Abbasid centuries, i.e. ca. 750-950 A.D.

57 McCormick 2001, 582-587, with further references; cf. Walmsley 2000.

58 See the balanced appraisal and bibliography of Wickham 2000, 358-363, who himself inclines to the later start; Bullough 1966, 99-116, remains the starting point for Pavia; for agrarian structures of production and exchange: Toubert 2004, 145-217.

59 Settlers: Hlawitschka 1960; pilgrims and coins: McCormick 2001, 398f; 681-687, respectively, and Ludwig 1999.

60 Working downstream from the see of Chur to that of Utrecht, inclusive, the bishoprics are Constance, Basel, Strasburg, Speyer, Worms, Mainz, and Cologne. Würzburg lay up the Main, and Trier, Metz and Toul up the Moselle. Rhenish building or rebuilding certainly

Carolingian empire's newest and richest abbeys lay on or close to this river system. For example, St. Gall, Reichenau, and Lorsch were all now built, rebuilt, or both.[61] At the Rhine's Atlantic mouth, the river reached that small but vibrant new commercial world that had sprung up around the shores of the North Sea.[62]

Along the Alps' northern face, Frankish power was creeping down the Danube, unifying and pacifying the lands east of Bavaria. Frankish and Lombard fighters from orthern Italy who attacked through Eastern Alpine passes helped the Carolingians conquer the Avars, which drove the Frankish frontiers up against those of an expanding Bulgarian empire anchored far to the east, on the edge of the Black Sea.[63] Even Byzantium, Venice's distant imperial master, was perking up again, as provincial and metropolitan markets showed increasing signs of life.[64] And so Venice, whose marginal location a turbulent seventh century had seemed to destine for misery, a hundred years later emerged on the continental edge of one growing political and economic world, at the end of a sea which led directly to others. This was the threshold situation – the systemic location – from which a commercial empire was born. It reflected and responded to developing structures of demand and communications hundreds and even thousands of kilometers from the lagoon. So too we must in future scrutinize more deeply the structures of demand which places like Dorestad, Hamwic, or Birka sprang up to serve, for we cannot imagine that trade dead-ended in each of these sites.

The third lesson of Venice for the origins of the trading towns lies in change, in the startling tempo and scale of changes that Venetian commerce underwent between 750 and 950. We have a tendency to imagine that historical change occurred slowly. This may have been true, for instance, in demographic growth, or the implementation of new agrarian technologies; it may have been true of whole sectors of the economy – metal extraction and production, craft production of combs and mold-cast bronzes – at certain moments in the past. But it was by no means a universal rule. There were times and places when, even in the early Middle Ages, things changed fast, heading in

included Chur: Sennhauser 1983, 2057; Basel: d'Aujourd'hui 2003, 224 and 234; Strasburg: Rapp 1997, 214; at Cologne there is controversy over dating the structures, but the basic issue seems to be whether one or two new cathedrals were built under the Carolingians: cf. Binding 1996, Weyres 1996, and Schmale 1996; Utrecht: Grosse 1997, 1351.

61 St Gall: Zettler 1995; for an overview of the abundant construction at Reichenau in the eighth and ninth century, see Zettler 1988, 267-285; Lorsch: e.g., Schefers 2004. So too mighty Fulda (some 75 km distant from the Main): Krause 2002, esp. 11-16 and 149-174.

62 McCormick 2001, 6-12 and 653-669.

63 McCormick 2001, 553-555.

64 Lefort 2002, 233, suspects the agrarian upswing began in the eighth century. Cf. Dagron 2002, 398-403, on cities, where renewed stability and perhaps the beginnings of growth can be recognized in the eighth or ninth century. Laiou 2002b, 713-715, sets the commercial recovery in the early ninth century.

quite different directions in different decades.[65] The study of communications routes in the eighth and ninth centuries appears to me to confirm the speed of Venice's growth as, in barely a generation, it rose from a local fishing and trading settlement to dominate western Europe's shipping and communications with the rest of the Mediterranean. Moreover, Venice's basic trading structures continued to undergo swift and broad change in the following decades. The early geographical axes of Venetian shipping and commerce shifted by the middle of the ninth century. The growing merchant convoys of eighth-century Venice had had wider geographic horizons, for they were as active in the Arab and Christian ports of the Western Mediterranean as they were in the Levant, while Venice's most famous trading partner, Byzantium, seems almost absent from its early commerce. In the second half of the ninth century, Venice, on the contrary, abandoned the Western Mediterranean and focused on the east, assuming then – and only then – the classic focus that would dominate its trade in succeeding centuries. It probably did not do so willingly, for it appears that around 840 the Arab conquest of Sicily effectively blocked Venetian ships from sailing to Western Italy.[66]

What Venice shows here is that we should be alert elsewhere to sudden growth, sudden slowdowns and shifts in the structure and orientation of the early medieval towns' trading patterns. In fact, Birka seems to parallel and confirm the kind of pattern detected at Venice. Björn Ambrosiani's excavations in the Black Earth zone conducted in the 1990s offer a much more precise stratigraphy and therefore a real chronology for the find materials over the broader site. Although the details need to be worked out and published, the new data challenges the conventional wisdom that, right from the beginning, Birka was geared eastward, toward long-distance trade across Russia with Muslim Western and Central Asia. According to Ambrosiani, the Russian-Asian route began only in the later ninth century, as the second phase of Birka's international trade. For the first phase, Ambrosiani agrees with an insight of Sture Bolin, who is more often cited than read. From ca. 800, Birka's exchange was oriented westward, and dominated by trade with England and the Carolingian empire; in his opinion, the relatively few Islamic objects that reached Birka before the late ninth century probably did so through the intermediary of Western Europe, that is, in some part, through the intermediary of Venice.[67] Certainly the westward spread of Islamic-style weights, folding weighing scales, and the big influx of central Asian dirhams appear to comfort the late-ninth-

65 Similar reflections have emerged from the contrasting picture of long-term continuity and cyclical change in the landscape deduced from survey archaeology of Roman Epirus, and that of sharp shifts and discontinuities uncovered by excavation in the same places: Bowden/Përzhita 2004.

66 McCormick in press.

67 See, e.g., Ambrosiani 2002b; cf. Bolin 1953.

century chronology.[68] Ambrosiani's idea also fits with what one can deduce independently about the chronology of travel and communications along the Northern Arc, for the first documented Scandinavian travelers to the east occur only in the late 830s.[69] So too Richard Hall has observed that the archaeology of York reflects very different trading worlds at the beginning and end of the ninth century. Anglo-Saxons and Franks prevail in 800, as opposed to the Scandinavians who dominate in 900.[70] At Ribe, an unusually clear stratigraphy in the Post Office excavation has authorized a stunningly precise chronology of different import wares. Should it prove well-founded, the new datings could help detect such fine changes across the northern *emporia*.[71] In any case, if, in only a few decades, Venice and Birka could grow so quickly – and perhaps also experience temporary and steep slowdowns –, and if their main markets and trading partners could reconfigure so dramatically, we need to consider the possibility that this too was true of other trading towns. Indeed, given the growing evidence of the links among them, it will almost necessarily have been true.

The excavated artefacts are of course the very means by which one can hope to observe change, that is the dilation and contraction of links among differing arrays of places. The finds point us to a further fertile complication. For we must gauge not just the relative speed of changes, but the economic nature of such changes. This means asking whether a trading town is a net exporter rather than a net importer, and how much, of what, from or to where and, of course, when. These questions inevitably spotlight the changing patterns of imports and exports of wares originating both outside the trading town – slaves, textiles, swords, querns, wine, ceramics – as well as those certainly produced or transformed in the trading town itself and its close hinterland, such as bonework, bronze casting, furs, or glasswork. It has been suggested that patterns of monetary circulation can help discern the nature of these critical changes.[72] Any such observation will gain in strength if it can be deepened through comparison with the movements of other vectors of value, of other wares issuing from or passing along the docks, booths and storehouses of the early trading towns.

These then, it seems to me, are the three main lessons, or questions, early medieval Venice, insofar as we know it today, contributes toward our broader investigation into the origins of early medieval trading towns. We need, first, to examine critically modern

68 Steuer 1987. Brather 1995-1996, who thinks the first dirhams reached the Baltic via Russia around 800 (94) and catalogues four hoards with *termini post quem* between 802 and 819 derived from their latest coin (127-128), cautiously observes (97) that some of the earliest hoards probably seem misleadingly early, and actually were deposited between ca. 825 and 850.

69 McCormick 2001, 563-564.

70 Hall 1999, 112-113.

71 Feveile/Jensen 2000, detect seven clearly demarcated phases in 400 layers of deposits between ca. 721-722 and ca. 800-820. Not all the phases are dendrodated.

72 In the suggestive essay of Metcalf 2001.

scholars' reliance on the putative role of early medieval kings as founders of the new trading towns. We ought to consider whether, at least in some cases, the undoubted interest and intervention of kings in the new towns may be the consequence, rather than the cause of their growth. Royal intervention would thus signal a new phase in such trading towns' development, not the beginning of that development. This is not to say that rulers never founded new trading sites; only that the example of Venice shows that we need to scrutinize each case on its own merits. Secondly we need to study more carefully the changing political, ecological and economic configuration of the local and long-distance markets and centers of demand to which the new trading towns connected – their systemic location –, and without which demand the trading towns would not have existed. So far, we know most about the long-distance connections, but early evidence is emerging to help delineate the vitally important local implications of the trading towns. When investigating the systemic location of the new towns, one cannot neglect the rich but largely untapped testimony of communications networks about the changing human networks and infrastructures that linked different centers: the human traffic between England and the Continent offers the most obvious and tempting example.[73] Thirdly we need to watch for signs of changing tempo and shifting geographical structures in the trade practiced by new towns, changes dictated by precisely those evolving political, ecological and economic configurations of local and distant trading partners, as well as by the structures of communications. And, lastly, we need to wonder why it is, and how it is, that there appear to be rough chronological convergences of growth and decline of trading towns spread across the continents. Do we see here coincidence, or connection?

73 Beyond the classic account of Levison 1946, the movements of individuals and letters appear rich enough that they could sustain the kind of analysis that underpinned my own work on the early medieval Mediterranean.

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Provenancing Merovingian garnets by PIXE and μ-Raman spectrometry

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Abstract

PIXE and μ-Raman spectrometry provide non-destructive, non-invasive, rapid and sensitive analyses of artefacts in order to answer three major issues in the field of art and archaeology: 1) identification of the material; 2) determination of provenance; and 3) the study of surface modification (ageing, alteration). We present here the study of the red gemstones mounted on jewels unearthed from the Merovingian necropolis of Saint-Denis (fifth-seventh century) and other excavations in France in order to determine their provenance. The composition of the major elements obtained by PIXE allowed us to identify these gemstones as garnets of the pyraldine family ($X_3Al_2Si_3O_{12}$, X=Fe, Mg, Mn). The trace element content of these garnets combined with the characterisation of microscopic mineral inclusions using Raman spectrometry and PIXE with a nuclear microprobe allowed us to determine their origin. The majority of the archaeological garnets appear to be almandines originating from India, while pyropes from East Europe were employed for the latest jewels (seventh century). On a few artefacts we observed intermediate pyraldines garnets originating from Ceylon (Sri Lanka), a type of garnet usually found on Roman jewels. This study yields interesting historical implications concerning the evolution of gem routes during the early Middle Ages.

1. Introduction

The Germanic peoples who settled in Western Europe during the fall of the Roman Empire introduced a very specific style of jewellery referred to as "Cloisonné Polychrome".[1] The gemstones used for these jewels were mostly red garnets, as thin and polished slices (<1 mm) inserted in a metallic cell structure, as shown in Pl. 5.1. The provenance

1 Scukin/Bazan 1993; Kazanski/Périn/Calligaro 2000.

of these garnets is an important archaeological issue. This is particularly the case if we consider the large amounts of garnets needed to manufacture these artefacts, which were not re-employed but eventually buried in tombs according to Barbarian custom. The determination of their origin could also shed some light on the establishment and evolution of the routes for precious goods during the early Middle Ages. During the past forty years, several studies have been undertaken and they have generally concluded that these garnets issued from long distance trade with Asia or with Northern or Eastern Europe.[2] The present work, dealing with an unprecedented large number of garnets set on Merovingian objects (more than 1000) aims to confirm these conclusions and to locate precisely the deposits used and the way the garnets were employed on the objects. The artefacts investigated span the entire Merovingian era (fifth-seventh century) and include those unearthed from the necropolis of the basilica of Saint-Denis near Paris, with the famous jewels of the Frankish queen Aregonde exhibited in the Louvre Museum.[3] As in previous studies, the fingerprinting of the garnets used for this work relies on their mineralogical and chemical characterisation, and we have taken advantage of two highly-performing, non-destructive analytical techniques, namely analysis with ion beams[4] and Raman spectrometry.[5]

Mineralogically speaking, garnets form a large family. The most common garnets belong to the *pyraldine* series whose chemical formula is $X_3Al_2(SiO_4)_3$, where X is a divalent ion like Fe (almandine), Mg (pyrope) or Mn (spessartite), with each combination corresponding to an *end-member*. The situation is actually more complex as natural garnets are a solid solution of *end-members* in varying proportions. Because garnets are relatively widespread minerals and their composition is highly variable, we had to combine several criteria to determine their origin.

2. Experimentation

The first criterion of provenance relies on the composition of the garnet crystal, which is strongly related to the conditions of formation of the host rock. The major constituents (Mg, Al, Si, Ca, Mn, Fe) and trace elements (Ti, V, Cr, Y) were determined by PIXE (Particle induced x-ray emission) using the external micro-beam line of the AGLAE (Accélerateur Grand Louvre d'Analyse Elémentaire) accelerator of the Centre de Recherche et de Restauration des Musées de France.[6] The identification of microscopic

2 Greiff 1999; Mellis 1963; Roth 1980; Bimson 1982; Arrhenius 1985; Van Roy/Vanhaeke 1997; Farges 1998, Quast/Schüssler 2000.
3 Fleury/France-Lanord 1998.
4 Dran/Calligaro/Salomon 2000.
5 Schubnel/Pinet/Smith/Lasnier 1992.
6 Dran/Salomon/Calligaro/Walter 2004.

oxides	Type I 48%		Type II 32%		Type III 6%		Type IV 8%		Type V 7%	
	%	σ	%	σ	%	σ	%	σ	%	σ
SiO_2	**36.0**	1.2	**37.3**	0.8	**39.3**	1.1	**41.2**	0.8	**41.5**	0.7
TiO_2	**0.0**	0.0	**0.0**	0.0	**0.0**	0.0	**0.4**	0.04	**0.45**	0.16
Al_2O_3	**20.8**	1.2	**21.5**	0.7	**22.5**	0.6	**23.1**	0.4	**21.6**	0.6
Cr_2O_3	**0.0**	0.0	**0.06**	0.04	**0.0**	0.0	**0.0**	0.0	**2.2**	0.7
FeO	**37.5**	2.2	**32.1**	1.5	**23.0**	2.6	**12.7**	1.6	**8.9**	0.5
MnO	**0.4**	0.5	**1.2**	0.9	**0.6**	0.4	**0.4**	0.03	**0.3**	0.03
MgO	**4.4**	0.7	**6.2**	0.9	**11.7**	2.3	**16.3**	0.9	**19.8**	0.5
CaO	**0.7**	0.3	**1.4**	0.6	**2.6**	1.5	**5.4**	0.2	**4.3**	0.28
End-members										
almandine		80.43		69.58		48.12		25.82		16.38
pyrope		16.82		23.86		43.66		59.28		64.94
spessartite		0.82		2,70		1.33		0.74		0.65
grossular		1,92		3.60		6.89		14.16		10.2
uvarovite		0.00		0.25		0.00		0.00		7.82

Table 1

mineral inclusions was achieved by micro-Raman spectrometry with a Horiba-Jobin-Yvon Infinity spectrometer with a 532 nm laser in confocal mode.[7] In a few cases, the elemental composition of inclusions was obtained with the nuclear microprobe in PIXE mode.

3. Results and discussion

The first criterion of provenance is based on the chemical composition of the Merovingian garnets. In the CaO versus MgO plot of Pl. 5.2, the composition of garnets markedly clusters in five groups. Table 1 summarises the mean composition of the five types observed. The majority of Merovingian garnets are almandine (Fe-rich) which are labelled type I and II (48 % and 32 %, respectively). Type I and II exhibit slightly different calcium and magnesium concentrations and as shown in Pl. 6.1; they can also be separated according to their trace element composition (chromium and yttrium). We have observed that type I and II are often mixed in various proportions in the same archaeological object. Type III garnets, with an intermediate almandine-pyrope composition (sometimes called rhodolites) were only found on a few artefacts. The last two types labelled type IV and V correspond to pyrope garnets (Mg-rich), respectively without and with chromium. Type IV and V were only observed on the latest jewels (end of the sixth-beginning of

7 Calligaro/Colinart/Poirot/Sudres 2002.

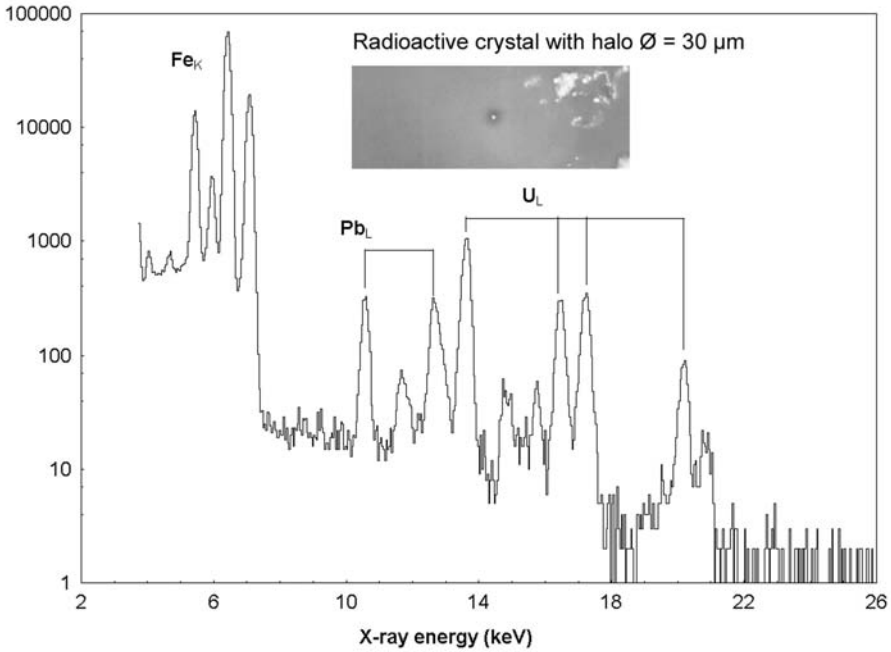

Fig. 1. PIXE spectrum of a radioactive inclusion allows us to date the almandine crystal. The relative uranium and lead content yields an approximate crystal age of 1.5 billion years

the seventh century). The high chromium content of type V is typical for garnets from East Europe (Bohemian deposits).

The comparison of the composition of the Merovingian garnets with the composition of reference garnets published in previous studies allows us to propose a provenance.[8] For instance, type I and II almandines might originate from India. The very peculiar composition of type III is typical of the garnets from Ceylon. We have noted that type III often occurs in Roman and Byzantine jewellery. The source of type V pyrope garnets likely corresponds to the Bohemian deposits located in East Europe. The origin of type IV is still being investigated. However, closer sources of almandine garnets that would fit with type I or II are reported in Gaul (Pyrenees, central massif) and in the Iberian Peninsula (Alméria), and their use cannot be *a priori* excluded. Some additional arguments must be employed to restrict the possible sources to the almandines.

The second criterion of provenance relies on the identification the microscopic mineral inclusions embedded in the garnet crystal. The Raman spectra collected on

8 Quast/Schüssler 2000; Greiff 1999.

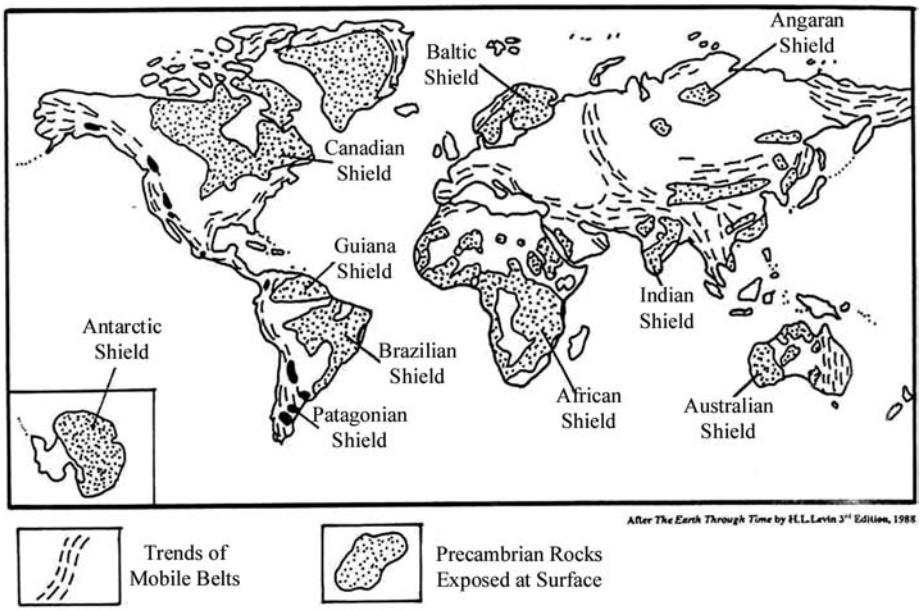

Fig. 2. Map of exposed rocks dating from the Proterozoic period (Precambrian). Among the few outcrops, note the Baltic shield in the north of Europe and the Indian shield, which notably contains famous garnet deposits

inclusions of type I and II garnets allowed us to identify apatite, zircon, monazite, calcite, quartz, etc. Among these inclusions, two appeared particularly significant: curved needles of sillimanite (Al_2SiO_5) and rounded radioactive crystals with a 10 µm diameter. Pl. 6.2 shows the Raman spectra of a sillimanite needle, which is a mineral only formed under a high-temperature and high-pressure metamorphism. This type of peculiar metamorphism is usually found in very ancient rocks. The radioactive crystal was analysed by PIXE with an external micro-beam with a 20 µm diameter. As shown in the PIXE spectrum of Fig. 1, uranium and lead were found in this inclusion. The presence of lead is due to the radioactive decay of ^{235}U and ^{238}U (0.7 and 4.46 billion-year half life, respectively) and this inclusion can therefore be used to determine the age of the crystal. The Pb/U ratio indicates that the garnet crystallised between 1 to 1.5 billion years ago, during the Precambrian period. Thus, the almandine composition of the garnets, the presence of sillimanite and the very ancient age of the crystal (~1.5 Ga) converge towards highly metamorphosed rocks of the Proterozoic (Precambrian period). From the map in Fig. 2, we can see that among the rare exposed rocks from that period are the Baltic and Indian shields. Since the composition of Scandinavian garnets is markedly different from that of the almandine considered in this study, we can discard all European sources of garnets. The only possibilities left are the Indian metamorphic

belts located in the Rhajastan and on the East cost, which notably contain famous garnet deposits of gem quality.

4. Conclusion and outlook

By confirming that a majority of garnets used in Merovingian jewellery originated from India, this work brings a decisive contribution to the mineralogical and gemmological investigations carried out over the course of forty years to determine the provenance of these gems. The other type of garnets (set on a few early artefacts) are pyraldine garnets from Ceylon, which are similar to those employed by the Romans; and pyrope garnets from Bohemia for the latest jewels. The presence of pyrope garnet from Europe might be explained by the closing of the garnet route to the East due to the invasion of the Arabic peninsula by the Sassanids at the end of the sixth century.[9] From that period onwards, Merovingians would have had to employ European garnets instead of Asian ones. Unfortunately, the limited size of the pyrope crystals and the weak production of these mines eventually led to the disappearance of this particular style of jewellery. Although some artefacts bore a single type of garnet, most of the time two or three types were mixed on the objects. Craftsmen combined various sources, although the motivation for this decision is undetermined (availability of the gems, location of workshops, symbolic or aesthetic considerations?). It would be interesting to extend this extensive work on the French Merovingian collections to Germanic jewellery collections from other European countries for a better understanding of the establishment and the evolution of the garnet route between Asia and Western Europe during the early Middle Ages.

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Flourishing places in North-Eastern Italy: towns and *emporia* between late antiquity and the Carolingian age

Sauro Gelichi

1. Abandoned towns and new towns in North-Eastern Italy during late antiquity: an overall picture

A considerable number of Roman towns disappeared in the West between late antiquity and the early Middle Ages. As for Italy, it has been estimated that about a third did not survive "in the period roughly between AD 300 and 800".[1] However, this process was not uniform across different areas: in some areas the ancient urban settlements lasted well (or at least it seems so since they continue to exist in the same place), while in others they vanished without a trace, or were established elsewhere. In some cases, those areas would see urban developments many centuries later as the land was reorganised (Fig. 1).[2]

Northern Italy essentially remained a land of towns throughout the early Middle Ages. In fact, only certain areas (lower Piedmont, for example) seem to show a total failure of the urban settlement. In other areas the failures appear to be of a rather modest sort, or else seem to be balanced by the founding or creation of new settlements that can be defined (or will come to be defined) as towns (Fig. 2).

Included in this last group is the area of the ancient *Venetia et Histria*, where twelve towns are recorded in the Roman age. A third of these (Aquileia, Altino, Concordia, Este, Adria) vanished entirely, while other places which were once towns (for instance, Padua and Oderzo) seem to have had temporary moments of decline.

If, however, we examine the terms used to define the survival of these ancient towns (decline, disappearance), we realise how imprecise they are and that they must be examined in light of the kind of evidence in question. The conditions of urban 'status' are generally seen by historians in relation to institutional concepts. The decline of Padua, for example, is linked to the temporary transfer of public authorities (that is, of the count) to other areas; its likely persistence is similarly linked to an institutional

1 Ward-Perkins 1988, 16.

2 In general Brogiolo/Gelichi 1998; Gelichi 2001.

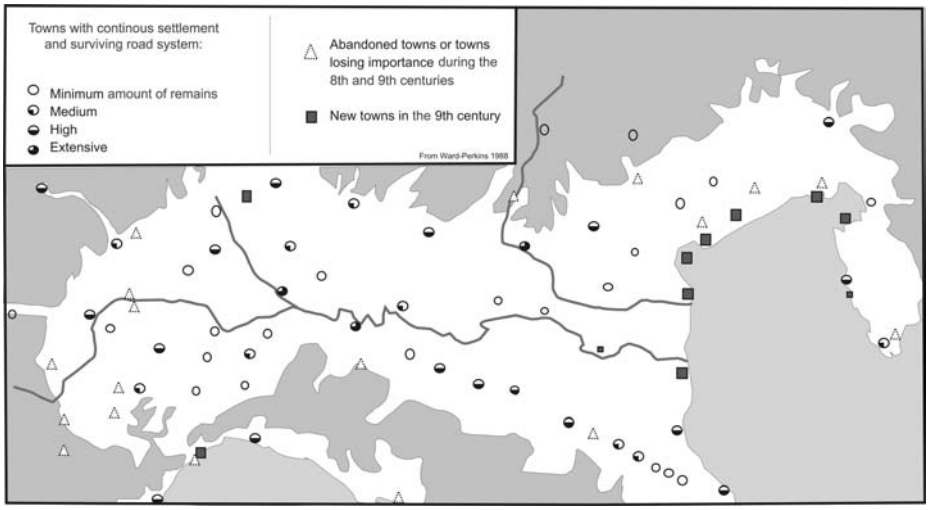

Fig. 1. Roman towns and new towns in the ninth century

concept, i.e. that of the stability of the bishop's diocese. From this perspective, only one ancient town (i.e. Este) was never a diocese – thereby testifying to a rather early decline – and only four other ancient towns (Oderzo, Adria, Aquileia and Concordia) lost this prerogative during the early Middle Ages.[3]

At the same time, many new centres are reported as being bishoprics from the seventh century on. During the Aquileian schism (in 610), centres previously non-existent on an institutional level such as Parenzo, Jesolo, Pola, Torcello, Olivolo, Chioggia, Eraclea and Caorle, are recorded as being bishoprics under the Patriarch of Grado.[4] Most of these settlements lie within or in the immediate vicinity of the Venetian lagoon. On an institutional level at least, therefore, these areas show a certain 'vitality' even in the seventh century. Many of these places survived throughout the early Middle Ages and indeed, in one case, gave form and life to that which was to become the most important Mediterranean city in the coming centuries, Venice (Fig. 3).

The causes of decline, as indicated by written sources, are generally attributed to events of a traumatic nature in this area, natural disasters or wars. Oderzo would have been abandoned after the seventh-century devastation wrought by the Langobards as led by King Rotari, according to Paul the Deacon. The decline of Altino is associated, even more arbitrarily, with the 'barbarian' invasions (first the Huns, followed by the Langobards once again). It is clear that this town disappeared during the early Middle

3 La Rocca 1994, 547-548.
4 Cuscito 1990.

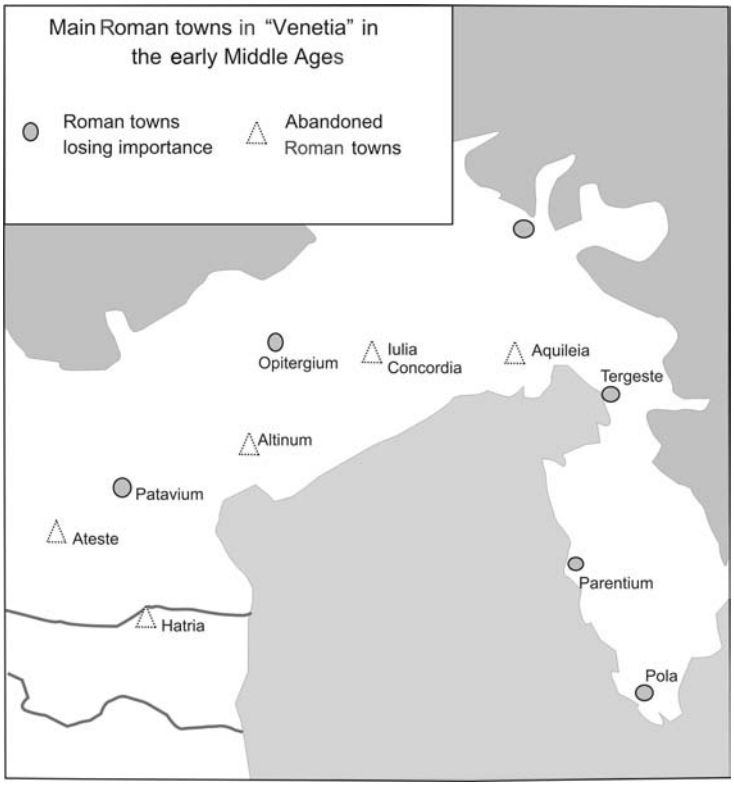

Fig. 2. Main Roman towns in "Venetia" in the early Middle Ages

Ages (today it is an uninhabited place), but its final fate as a settlement is once again associated with individual episodes in the history: in this case, the escape to the islands of the Venetian lagoon due to "fear of the Barbarians" (*metu barbarorum*).[5]

Conversely, among those regions in which urban systems of Antiquity seem to survive rather well without any apparent discontinuity, the ancient Regio VIII *Aemilia* must certainly be included (Fig. 4). In this region, in fact, only a few sites (Veleia, Claterna, Brescello) disappeared entirely between late antiquity and the beginning of the early Middle Ages. This substantial persistence of urban settlement, however, does not mean unchanging stability in the hierarchy of regional organisations. In fact, an area without towns like the Po estuary, a place of vast estates of imperial revenue in ancient times, records the founding of at least two new centres (Comacchio and Ferrara) and the elevation to a higher institutional status of another (*Vicohabentia* became a diocese) in the early Middle Ages.

5 Azzara 1994; *idem* 1997.

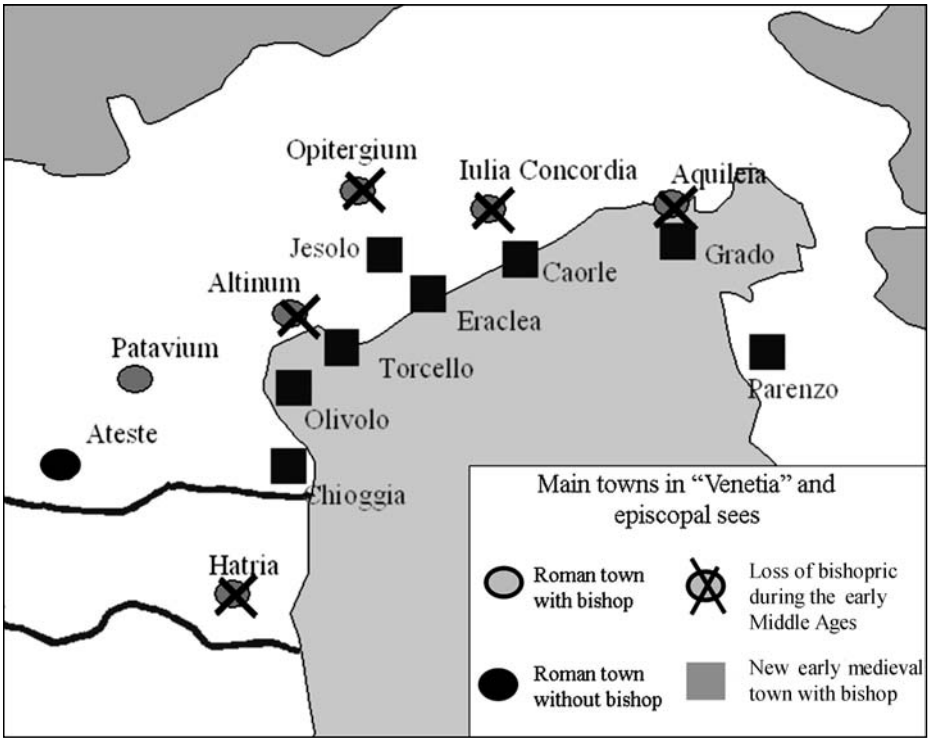

Fig. 3. Main towns in "Venetia" and the episcopal sees

Between the seventh and tenth centuries, therefore, old lands without towns (like the Po estuary) and new towns (or 'almost-towns') without lands (like the settlements being created in the Venetian lagoon) emerged as new centres of social and economic organisation. A strip of coastal land lying between Ravenna (in the South) and Grado (in the North-east) was to become one of the most important areas of Northern Italy.

2. The Eels of Venice

In a rather famous passage from his book *Venice, A Maritime Republic*, Frederic C. Lane tells us that even in the ninth century, Comacchio, nearer to Ravenna and the mouths of the Po estuary, was contesting the emerging economic hegemony of the lagoon settlements that had recently encircled the Rialto. In the late ninth century the Venetians, besieging and sacking the town, put an end to this state of competition and took full control of the river mouths and inland trade:[6] "Had Comacchio defeated the Venetians

6 *Historia Veneticorum*, III, 28, 44.

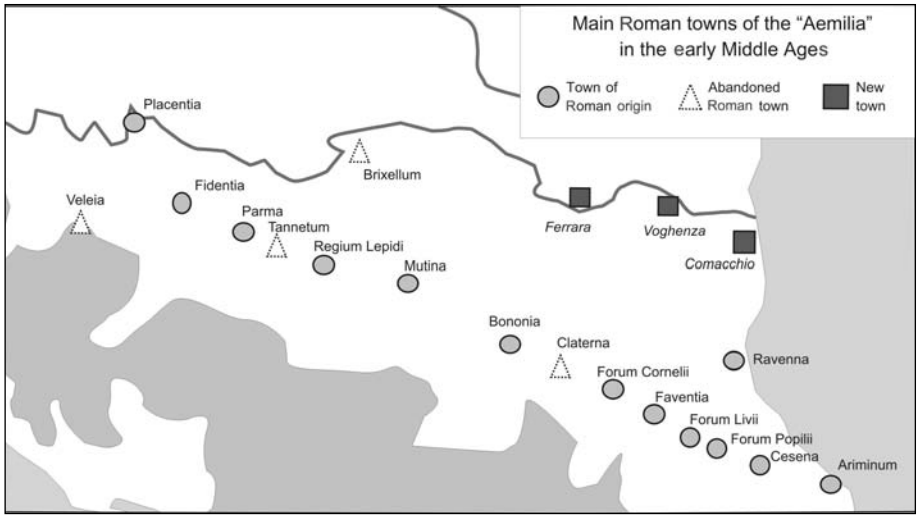

Fig. 4. Main roman towns in the "Aemilia" in the early Middle Ages

and established its control over the mouths of the Adige and the Po, it instead of Venice might have become the Queen of the Adriatic, and Venice might now be an inconspicuous village in a stagnant lagoon, as dead as the lagoon of Comacchio, famous only for its eels".[7]

The destruction of Comacchio, recorded in the chronicles of the time, clearly marks a turning point in the reorganisation of settlement hierarchies in this area. Whether one gives credence to this event is of little importance from a certain point of view. In our opinion, in fact, it undoubtedly testifies to a moment of fundamental change also for the settlements developing even in the lagoon area.

The evolutionary course of these areas in the political and economic systems of Italy in the early Middle Ages rests upon a well-known point of departure, the settlements of Roman times, and a equally or even more established point of arrival, the rise of Venetian dominance. It remains unclear how the latter situation developed, a process that is poorly documented. Historians of late antiquity and the early Middle Ages have investigated the origins of Venice at length; but these investigations have for the most part been examined only from the perspective of Venice.[8] Furthermore, it is only recently, and in a confused and rather uncoordinated way, that other sources such as archaeology have been taken into consideration.[9]

7 Lane 1973, 6.
8 Crouzet-Pavan 1995.
9 Gelichi 2004.

Giovanni Diacono, *Istoria Veneticorum*, beginning of the 11th century

Term used	Early Medieval towns
Civitas	Grado Cittanova Rialto
Villa	Comacchio
Ecclesia	Olivolo Torcello Equilo
Castrum	Carole Comacchio Ferrara
Insula	Malamocco Torcello Olivolo
Portus	Equilo Grado

Fig. 5. Terms used in John the Deacon

The archaeology of many of these places (that of Altino on the one hand and that of Venice, Torcello, Olivolo, Cittanova and Comacchio on the other) has been, apart from the quality of individual operations, a somewhat uncoordinated fact-finding process. So, while in international debate these places are frequently dealt with and discussed in a framework of the developments of economies and settlements in early medieval Europe, their archaeology (and I would add, their history) is instead relegated to the context and issues of an extremely local nature. With few exceptions, the effort of making comparisons of data and information fluctuates between clarifying the problem of origins or emphasising the problem through an artificial renewal of scientific thoroughness.

The archaeological research is still in its infancy. Nevertheless, one may begin to gather certain data and, above all, compare the different situations, so as to evaluate archaeological potential; and to see what material sources can tell us and what we must (or can) ask of them. In short: to evaluate whether investigation in the field offers more food for thought and historical critique than it has so far been seen to offer – mainly to the discredit of archaeologists, I believe.

Because of the fragmentary nature of the data we must proceed through *exempla*. We shall do so by examining three of these new sites (Comacchio and Ferrara, in Emilia, and Cittanova, in the Veneto) and the new settlements in the lagoon area. First of all, we will evaluate some aspects related to written records; we will dwell upon the degree and quality of each archaeological context; and finally, we will attempt to assess whether there are characteristics that may help us to correlate and compare these places on the level of material and economic systems.

3. *Castra*, *civitates* or *emporia*? How these settlements are defined in written sources

The question of how these settlements came to be defined in more-or-less contemporary written sources is not a simple one. The simplest solution, that of a straightforward reading of vocabulary, besides being of marginal value on the level of textual critique, may also be misleading on the level of understanding the form and organisation of any given settlement. In the absence of archaeological sources, the tendency may be to transfer very general characteristics onto environmental contexts and onto chronological, social, political and institutional contexts, which differ among themselves.

An interesting text to analyse along these lines may be the Chronicle of John the Deacon who was writing around the beginning of the eleventh century (Fig. 5). It is a highly biased history (but then again, what is not?), set in a period in which the dominion of the centre which developed around Rivoalto had been completed. With the exception of the ancient towns, that is the urban centres of Roman origin, in the *Istoria Veneticorum* no other new place (not even marked by the institutional presence of a bishop) is defined as *civitas*. There are only three exceptions to this rule: Grado, Rivoalto and *Civitas Nova Heracliana*. That this should be true of Grado is understandable enough, also because the place (originating from the ancient Aquileia) was a metropolitical centre. That this should be the case for Rivoalto is equally plausible, as it formed part of the self-celebratory programme that the historian intended to perpetrate. Even the designation of *civitas* attributed to Cittanova, to which we will return later, is understandable: here it is the direct action of the Emperor, independently of the material results of his action, which defines the new inhabited centre as *civitas* (to which must be added, on an institutional level, the presence of a duke and a bishop).

If it is useful to evaluate the circumstances in which the term *civitas* is used, it is also interesting to note the names that John uses for the other lagoon settlements. Torcello is simply defined as *insula* (1,6). Olivolo, a bishopric, is also recorded as *insula* (II, 19, 33) and then as *ecclesia* (II, 26, 42; III, 24). Equilo is similarly referred to as an *insula* and *ecclesia* (I, 6), and its *portus* is also mentioned (IV, 46). Caorle, another bishopric, is simply a *castrum* (II, 51). Equally interesting are the terms John uses for the centres in the Po Estuary. Ferrara is defined exclusively as a *castellum* (IV, 11) and *castrum* (IV, 43). Finally, Comacchio boasts even more variants: *insula* (III, 44), *castrum* (III, 28) and *villa* (III, 12).

Analysis of the John's work is interesting, because it makes explicit the difficulty of defining these new flourishing places. John also never uses the term *emporium*, which does not appear to be used either in other written sources (chronicles or otherwise), with the exception of Constantinus Porphyrogenitus,[10] who, in the tenth

10 *De administrando imperio*, 23-24.

century attributes it only to Torcello (*emporion mega*). For all the other lagoon settlements, even the Byzantine emperor uses the word *castron* (the equivalent of the Latin *castrum* or *castellum*).According to some chronicle sources of the tenth-eleventh century, therefore, the Venetian lagoon, like the Delta area of the Po, would have been swarming with castles. Yet we might regard these as particular castles, as emphasised some time ago by Castagnetti (1992), in the sense that none of them (with the exception, perhaps, of those in the Ferrara area) seems to have been connected to the well-known process of "incastellamento" – that is, the creation of fortified settlements by the nobility. Furthermore, rather than indicating a site of actual fortification, my impression is that in many of these cases the word *castrum* is a convenient verbal substitute to replace a term difficult to render with the vocabulary at his disposal. These places are not yet proper towns (or *civitates*), but neither are they simple villages (*villae*), but are something in-between. They are 'almost-towns' or small towns.

4. Flourishing places in North-Eastern Italy: the archaeological evidence of Comacchio, Ferrara, Cittanova, and the Venetian lagoon

The archaeology of these places is different in quality, quantity and strategies employed. On the whole we cannot say that we have good information about these sites, above all with regard to the early Middle Ages. The period of greatest significance seems to have escaped the archaeologists. A detailed analysis of the kind of archaeology carried out in these places would be very interesting and would explain the reasons for this lack.

Comacchio

The earliest information we have about Comacchio (Fig. 6) from written sources dates back to the eighth century and makes reference (in 715) to *habitatores Comaclo* in the famous Capitulary of Liutprand in reference to the salt trade; shortly after that, we have the information of the existence of a bishop (723: Vincenzo). The possibility of the treaty with the Langobard king[11] being a hundred years earlier and the settlement arising even during the first quarter of the sixth century[12] are hypotheses only supported by historically plausible arguments. The archaeological data available up to now, in fact, appear to be of a completely different kind.

11 Most recently studied by Montanari in 1986.
12 Patitucci-Uggeri 1986, 281-283

Fig. 6. Aerial photography of Comacchio (1984)

We have recently had the opportunity to re-analyse pottery from archaeological research carried out in Comacchio and its immediate vicinity for over fifty years. The resulting picture is surprising (Fig. 7). Pots and jars come mainly from four places: the historical centre, the excavations of Via Mazzini and those at the eastern and western outskirts, or rather, that of Valle Raibosola and Valle Ponti (the village of San Francesco). There is a scarcity of imported pottery of late antiquity (*amphorae* and ARS) while there is a most surprising abundance of Italian (or eastern) amphorae of the eighth and ninth centuries. Together with this material there are, quite naturally, vessels of soap-stone (imported from the Alps) and glazed "Forum Ware" (imported from the central Italian area?)

The picture of material culture, then, testifies to a marked presence of vessels for transport of the eighth-ninth centuries: evidence which at present finds no equal, at least in terms of quantity, in the whole of Northern Italy. This fact should not surprise us, considering what we know of Comacchio in the eighth-ninth centuries, but it must at least make us reconsider some rather hasty interpretations of the kind of products that were traded by the *habitatores Comaclo*. Not only salt, then, but also oil (which cannot have been made from the few olive groves recorded on the Pomposa island and

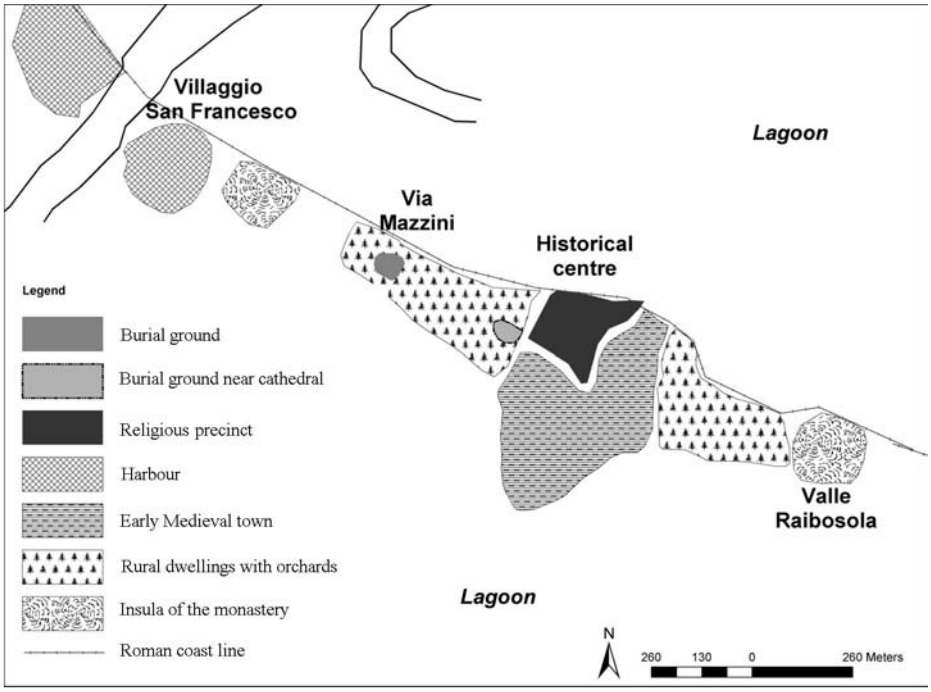

Fig. 7. Comacchio: the early medieval town

the hills of Romagna, but rather must have arrived from southern Italy and/or the East), and perhaps also fish sauce (*garum*).

The excavation carried out in the location of the village of San Francesco in the second half of the nineties, during a division of the area into lots, has provided an archaeological picture of great interest, although it has remained unpublished. Along the trenches, a series of aligned posts emerged, with wooden boards in a state of perfect preservation in some cases (Fig. 8). The materials found in the archaeological deposits contemporary with these structures leave little doubt that these are the remains of landing stages, once again dating to the eighth and ninth centuries. The diverse positioning of these landing stages, located in an area of some hundreds of square metres (225.00 sqm), indicates that they were positioned on a series of canals. This excavation, which lends further plausibility to the remains of pilings found in the thirties in the same area,[13] has brought to light, although in fragmentary manner, the remains of one of the harbour areas of this place in the early Middle Ages: a sensational discovery which, unfortunately, up to now has not enjoyed the attention it deserves.

13 *Eadem 1986*.

Fig. 8. Comacchio, Valle Ponti – Villaggio S. Francesco, the 1924 excavations

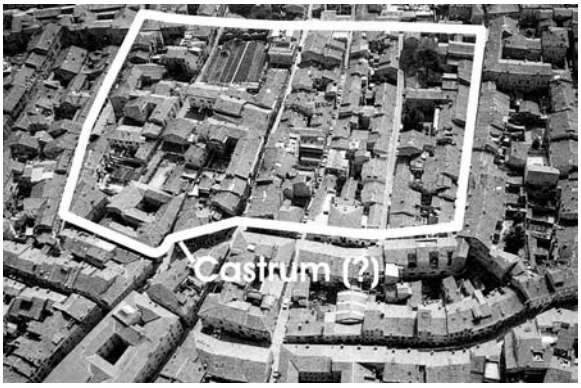

Fig. 9. Ferrara

Ferrara

Also with regard to Ferrara, there are no data in agreement between the traditional date of its foundation (the beginning of the seventh century) and the archaeological records available up to now. Unlike Comacchio, Ferrara has been much explored over the last twenty years, since the early eighties. Research operations, however, have remained (with a few exceptions) rather far from the areas in which primitive settlements are thought to have been located (the *castrum* on the north bank of the ancient course of the Po)[14] (Fig. 9) and San Giorgio, on the south bank (a diocese). In any case, at present there are no indications of sites or material remains from the seventh and eighth centuries and a wall thought to be that of the Byzantine *castrum* is probably a late medieval construction.[15]

14 Bocchi 1974; *eadem* 1976; Uggeri-Patitucci 1974.
15 Brogiolo/Gelichi 1986, 49-62.

Furthermore, written sources that mention Ferrara do not go back beyond the eighth century. The *castrum* is spoken of only from the tenth century onwards. In the ninth century, a bishop of Ferrara is mentioned with an ambivalence that tells much about the institutional instability of the see.

The fascinating hypothesis of a city that developed in linear form along the river must not necessarily be abandoned. The actual location of plots of land along the ancient course of the Po recalls the same kind of division and development that we find in Venice and in Cittanova (which we will discuss later). What is at question here is the chronology of the phases of development.

In archaeological terms, Ferrara appears to be, in every respect, a flourishing centre between the tenth and eleventh centuries, as is shown by the stratifications found and excavated up to now, which are full of pottery imported from the Byzantine region and amphorae from southern Italy (Puglia) and the Western Mediterranean area. Thus it is likely to have had modest origins in the early Middle Ages. In some respects the city seems to inherit the role of Comacchio as a bridgehead of trade with the Po valley area, but within a framework of profoundly changed political and economic situations.

Cittanova Eracliana (Diego Calaon)

In historiographical tradition the founding of Cittanova is doubly linked to the destruction of the Roman centre of *Opitergium*, in 639 by the Langobards, and the decision of the Emperor Heraclius who (through Isacio the exarch) made compensation to the Opertigian refugees by the founding a new town that was soon to become the diocese of Oderzo.[16]

The new town, also known as *Civitas Nova Eracliana*, was set in a lagoon-type environment. The paleo-environmental information is entirely relevant and if the archaeological area today persists as a flat agricultural panorama, the result of massive land reclamation project in the early twentieth century,[17] the study of numerous corings indicates an unstable and highly variable river environment, with rapid alternation of fresh and salt water.[18] The settled sandy mounts, little above the sea level, are sand-bank-type areas.

The discovery of some very clear traces visible in a famous aerial photograph of 1977 led to the idea at a certain point that it would be possible to find the remains of a great city organised along the riverside and characterised by a dense network of canals and viable roads just below the level of the land.[19] Subsequent excavations showed that these

16 Cessi 1932.
17 Fassetta 1977.
18 Blake/Bondesan/Favero/Finzi/Salvatori 1988.
19 Tozzi/Harari 1984.

Fig. 10. Aerial photography of Cittanova (1974)

signs are in fact linked to operations of controlling the waters for purposes of creating "reclaimed" areas free from water, most likely for agricultural purposes (Fig. 10).[20]

The shift of attention from an urban context of imperial foundation, of which confirmed monumental archaeological traces are reduced to the presence of a baptistery, to an agricultural, riverside context, seems to be of notable significance. The settlements along the canal, from late antiquity – at least from the third and fourth centuries onwards – are areas provided with land fit for cultivation and, at the same time, areas looking onto the river with a series of wooden riverbank structures and landing stages. These are far from sporadic and suggest an area of "*emporia*".

The research developed from the analysis of the archaeological records of the published data of the different excavation and research campaigns held in the area of Cittanova from the second half of last century. With the use of single GIS platform, it has been possible to cross-reference the paleo-environmental information with the data of the settlement and view them inside a DTM (Digital Terrain Model) that should represent as closely as possible the original hydrographical and altimetrical situation of the settled area and its agricultural context.

20 Salvatori 1989a.

From the chronological point of view and on a long diachronic view, it is possible to emphasise that the area has been used since the thirteenth century B.C. by a Recent Bronze settlement, known through surveys,[21] which is to be found on a river mounts north-east from the area of the see of the medieval town.

Traces of a strong continuity of settlement are found for the classical age,[22] when this area was characterised by a lagoon-like landscape that was not far from the coastline. Even if we do not have any data from stratigraphic excavations, it is possible to describe this settlement as a series of rural settlements dating to the imperial age. They are distributed along a river, navigable, link the external sea with the lagoon; and provide access to the Roman centres of *Altinum* and *Opitergium*.

These structures, different in type and size, can be identified partially with rural villas, with mosaic *tesserae* and decorative architectonic elements, and partially with other rural buildings that are not better identified. It is sure that the economy of this kind of settlement is a "resource" economy, where aside the agricultural practices of a semi-lagoon settlement great importance was given to the activities of exploitation of the lagoon itself – mainly fishing and salt production (Fig. 11). A certain number of people was living in the area: this is widely highlighted by several *necropoleis* found in the twentieth century.[23]

Interesting data is obtained by comparing the number of settlements known for the second century AD with those of the fourth century AD: the number of settlements diminishes, going from 7-10 sites to 2-3 sites. This phenomenon, which can be interpreted in the context of changes in late Roman agricultural practices that seem to be applicable at least partially for the "*Venetia"*, can lead to the hypothesis of a growth of the size and number of properties. They become similar to *latifundium*, damaging the small and medium agricultural properties.[24] The foundation of Cittanova has to be framed within this context.

The monumental archaeological evidence connected with the foundation of the town are the structures found in the 1950s during the land reclamation operations. In a dig lead by Fassetta in 1954, the side walls of a baptismal building have been found, along with walls of other buildings, of which we can infer at least two phases from the maps drawn in that occasion but whose original function is uncertain. An ichnographic reading of these buildings,[25] of which we have an aerial photo dated 1954, lead to their interpretation as a church. It is certainly a religious district that can most probably be identified with the see of Civitas Nova Eracliana of the end of seventh century AD.

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21 *Idem* 1989b.
22 Borghero/Marining 1989.
23 Ghirardini 1904.
24 De Franceschini 1998; Busana 2002.
25 Dorigo 1994.

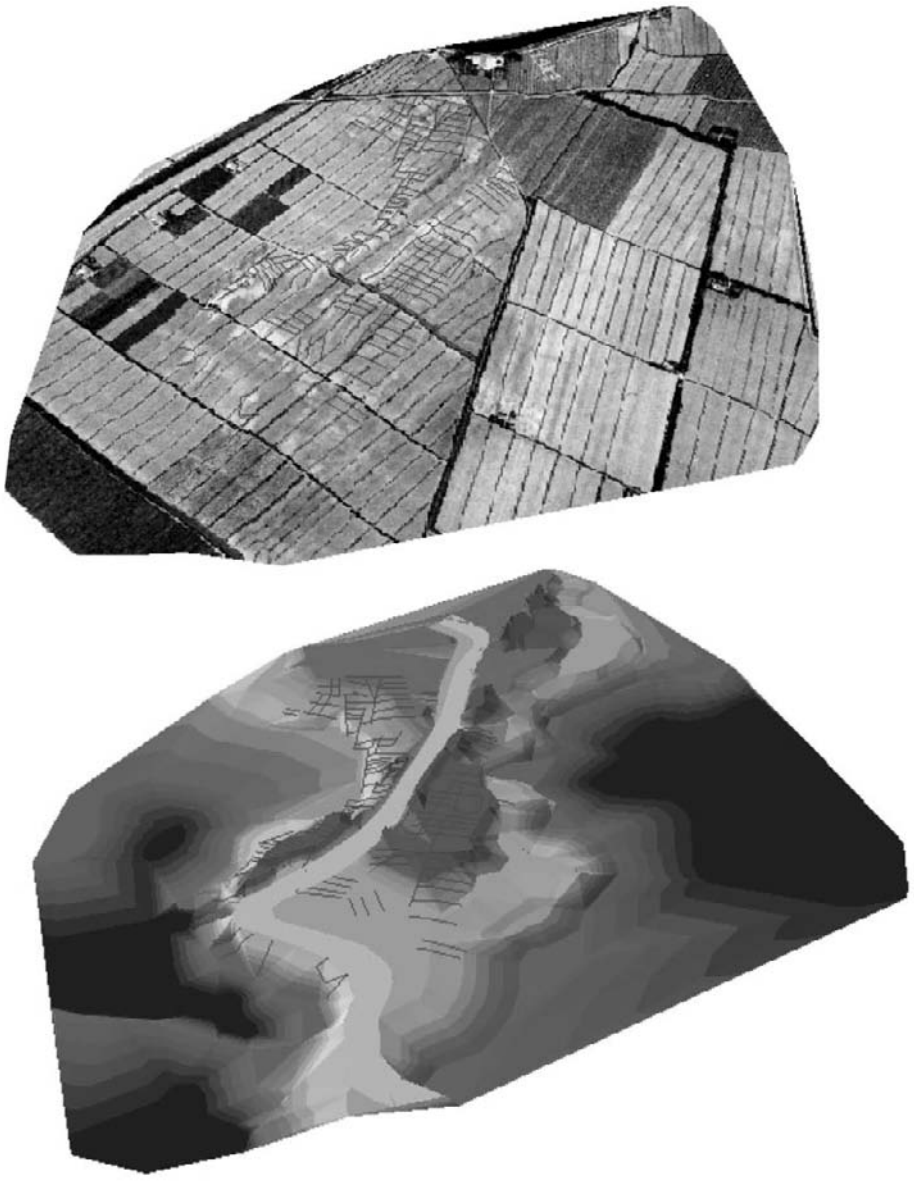

Fig. 11. Cittanova: traces of agricultural cultivation and DTM

Basing on these interpretations of the 1980s it has been imagined that the perpendicular lines still visible on the ground and visible in aerial photos could be referred to the urban development of the town along the canal that was flowing from the episcopate towards south and towards the coast. The hypothesis then was of the presence of a lagoon-like centre of the Byzantine period, perfectly similar to the image of Venice some centuries later.

Probably the disappointment for the "missed discovery" of the town along the canal, confirmed by the archaeological researches of the 1980s, has not yet permitted a detailed reading of the data from surveys and archaeological trenches realised along the waterfront of the ancient canal of Cittanova.

In fact, if the dark lines visible in the aerial photo do not correspond to roads and canals of a town of seventh and eighth century, but to agricultural water disposal canals from the fourth century onwards, it is possible to describe their continuity of use at least for the beginning of early Middle Ages.

The distributive analysis of the materials from surveys allowed us to draw important conclusions:

- The area along the canal contains a continuity of settlements from the imperial age to early Middle Ages.
- It is possible to identify some area of greater concentration of roman bricks that bears witness to the topographical distribution of the rural buildings of Roman age.
- The different presence inside the field of diagnostic materials, like mosaic *tesserae*, permits us to distinguish areas with villas from areas with buildings for the exploitation of the resources.
- The concentration of diagnostic materials (determined precisely during the study) for the early Middle Ages, like soapstone, do not correspond to the area of greater concentration of Roman bricks (Fig. 12).
- The settlement, both late antique and later, was characterised by many structural elements in perishable material (wood), as highlighted by the study of the water disposal canals.
- The buildings were distributed along the canal and in the early medieval phase had a series of wooden docks on the waterfront of the canal itself, which evidently was the main means of communication.

It is possible, moreover, to speculate that during the study of the materials from the surveys not every finding referring to the seventh and eighth century has been properly identified. The review of the published materials – even if not complete – permits to identify the early medieval phases as being more representative of the entire area.

The fact that with these phases we have agglomerations of dispersed building material can be explained with the presence of wooden buildings. These are not easily identifiable on the surface, especially in an area heavily modified by later ploughing operation.

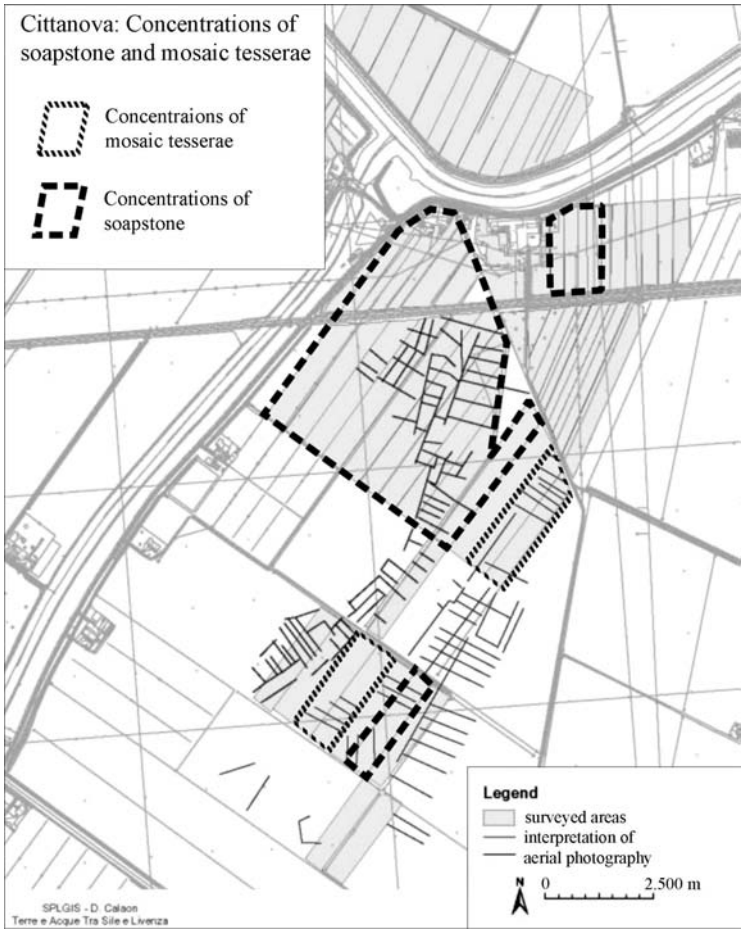

Fig. 12. Cittanova: concentrations of soapstone and mosaic *tesserae*

In conclusion, the area of Cittanova can be described as a religious centre, the seat of a bishop, with a settled area dependent upon it. This area lays along a canal and is characterised by a double economy, linked on one side on the agricultural use of the terrains around the lagoon; and on the other side on to the economic and commercial possibilities offered by the important path of communication (the canal itself) inside a broader system of communication inside the lagoon, which links the Adriatic area with the interior of the Po valley.

Fig. 13. Torcello, S. Maria Assunta, the 2000 excavations

The Venetian Lagoon area

The Venetian Lagoon area deserves its own account, impossible in these circumstances. We will limit ourselves to some very general observations regarding archaeological contributions to the knowledge we have concerning the so-called question of origins.

Various archaeologists have worked on this subject in the past, but the most thorough, most interesting observations have been made by Polish researchers, who have excavated in the lagoon since 1960-61: first at Torcello,[26] and then at Murano. However, their operations were able to draw upon a very limited amount of information, deriving from few excavations and almost all from a single site (Torcello) (Fig. 13).

In later times, other researchers have tackled this issue, also from an archaeological perspective, with the aim of retracing a presumed Roman history of the lagoon settle-

26 Leciejewicz/Tabaczyńska/Tabaczyński 1977; Leciejewicz 2000a; *idem* 2000b; *idem* 2002.

ment. Many traces of that period have been indicated, even to the point of affirming that in Roman times, the lagoon was not only a permanently inhabited but was also cultivated.[27]

On cooler, critical examination these data are of little significance. There are very few findings that unequivocally record the phases of Roman occupation. There is no doubt that the lagoon was inhabited, but it is difficult to say whether there was or not a permanent settlement and what it consisted of.

This interest in the ancient history of the Venetians has obscured the history of later centuries, those in which the lagoon settlements were formed and in which an initial hierarchy was created following the transfer of the Ducal seat to Rivoalto in the early ninth century. Concerning these centuries, we know very little from an archaeological perspective; the only organised data are still those of the Torcello excavations of the early sixties. This is disappointing, but the reasons do not only concern the quality and nature of the archaeological source. They also depend upon a mistaken strategy in the archaeological approach, or rather, the absence of any strategy at all.

Nevertheless, in recent years some operations have provided noteworthy contributions, as, for example, the paleo-environmental research of Albert Ammerman.[28] Excavations at Torcello, San Francesco del Deserto[29] and Olivolo[30] have revealed important phases of the fifth and seventh centuries (Fig. 14). If we know little of the eighth and ninth centuries, we have something more to say regarding late antiquity.

The first interesting piece of information is that the environmental changes of the late fourth and the early fifth century linked to hydro-geological damage would seem to coincide with the first real permanent settlement in the lagoon: this can be seen at Torcello, Olivolo and San Francesco del Deserto in the construction of embankments, roads, and buildings with brickwork molding. Furthermore, it is from this moment onwards that we find imported materials[31] that mark the lagoon stratifications without interruption throughout the whole of the seventh century. This could mean that the lagoon inhabitants, between the fifth and seventh centuries were not merely simple saltwater fishermen (as is assumed based upon the famous letter of Cassiodorus[32]), but probably also merchants; and that the lagoon, in particular the northern part, was

27 Dorigo 1983.
28 Ammerman/McClennen 2001.
29 De Min 2000a; *idem* 2000b.
30 Tuzzato 1991; *idem* 1994; Tuzzato/Favero/Vinals 1993.
31 ARS and amphorae: Grandi in print; Toniolo in print.
32 *Epistulae Variae*, XII, 24: 536-537.

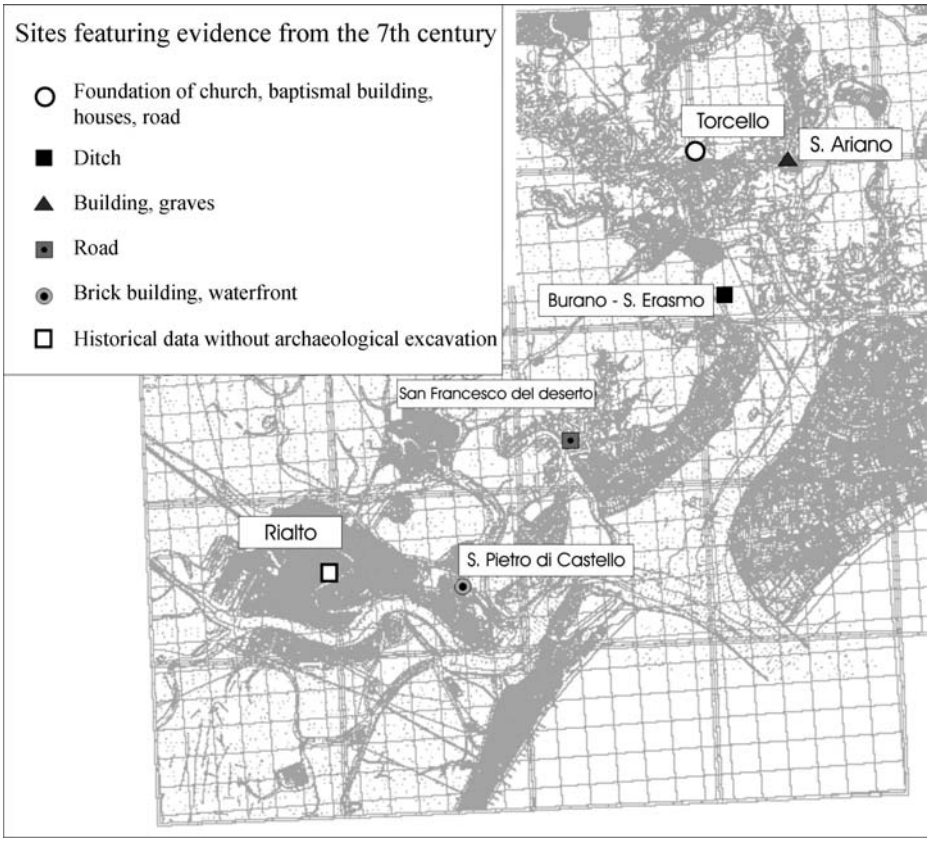

Fig. 14. Venetian lagoon: sites featuring evidence from the seventh century

beginning to play an important role in trade (linked to the transfer of the court to Ravenna and the decline of Aquileia). It was a kind of bridgehead of the Altino site which, moreover, in this period seems to have been far from in decline.[33]

5. New towns in North-Eastern Italy: a preliminary comparison

On the basis of archaeological data available to us at present, it is possible to offer an initial evaluation concerning two aspects of the subject: that of potential and that of characteristics.

33 Tirelli 1995; Asolati 1993-95.

5.1. The potential of archaeology

Of the four places under examination, only one, Cittanova, was abandoned (or partially abandoned) in the early Middle Ages; other areas of the lagoon also vanished in that period (like Torcello, for example, or Equilo), leaving solely medieval evidence of church buildings.[34] The other places, however, have continued to exist: it is clear that the kind of archaeology we can apply is different, in the sense that only in the case of Cittanova is it possible to plan excavations and research over a wide area of land. In the other towns, archaeology must take account of the historical construction and the needs of the existing towns: this does not mean renouncing the possibility of planning archaeology for these places as well, but it means doing it in a different way.

Cittanova is the site most recently excavated with rather advanced diagnostic equipment.[35] The results, however, have not lived up to expectations. This is rather strange and perhaps may be due to a falling-off of interest arising from a disappointment. Those working on this project were perhaps expecting to find a Pompeii of the early Middle Ages and from this point of view, they have undoubtedly been disappointed. A reconsideration of the published archaeological data, however, is far from insignificant. Rather than being a fossilised Venice, Cittanova may represent, at an embryonic stage, the defining characteristics, on a structural and organisational level, of these new river or lagoon settlements. The resulting model is that of a settlement organised around a hub where the institutional bodies are gathered (the bishop's seat, the ducal seat), with brick buildings; and a loosely-knit inhabited area consisting very likely of wooden buildings on plots of cultivated land, with access to the canal.

A similar account is perhaps possible for many of the other settlements that vanished from the Venetian lagoon. In any case, from this perspective, the archaeology of Torcello remains a great lost opportunity: it is enough to locate the explored areas on a map to realise that the investigations carried out in 1960-1961 were opened near or adjacent to the churches. Today we know much more about the baptistery, Santa Maria Assunta and Santa Fosca, but still very little about the social, economic and community characteristics of that *emporion mega*. If the archaeological investment continues to be directed towards the excavation and study of the church buildings, therefore, it will be very difficult for us to understand the nature and quality of these early medieval settlements.

The archaeology of the places that still exist is a different issue, but here also there is no doubt that research has been done rather fortuitously. Some of these places have still been explored very little and only occasionally, such as Comacchio, despite the glimpse of its extraordinary potential. Other cities, however, like Ferrara and Venice, have been greatly excavated in recent years, with high-level scientific equipment. The

34 On Equilo: Dorigo 1994.
35 Blake/Bondesan/Favero/Finzi/Salvatori 1988; Salvatori 1989; *idem* 1990; *idem* 1992.

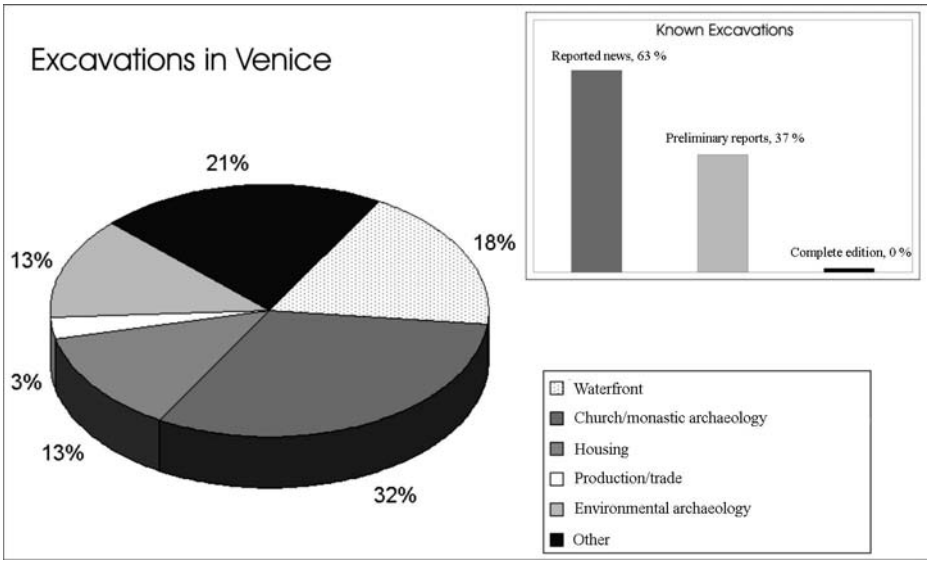

Fig. 15. Excavations in Venice

case of Venice is particularly interesting to analyse. Here a shift has been made from an absence of archaeology or from rescue archaeology, to extensive archaeology (in the sense that each small operation is now controlled and monitored), without this having brought substantial improvements in our knowledge (Fig. 15). One reason is the non-circulation of information; it is enough to compare the number of excavations published and how they have been published to realise this. However, it is also interesting to note where excavations have been carried out. If we locate them, in fact, we realise that very few lie within the areas thought to be potential settlements between the eighth and tenth centuries (Rialto and Olivolo) (Fig. 16). Even within the settlement areas, the positioning of investigations is far from irrelevant. Some time ago it was seen as extraordinary that an excavation on the island of Olivolo (a bishopric of the eighth century) revealed important stratifications from between the fifth and seventh centuries but virtually nothing beyond the seventh century. In fact, this should not really surprise us. If we superimpose a series of topographic data we realise that the area chosen for the excavation lies within an area that towards the beginning of the eighth century was absorbed into the church possessions. In this case the most interesting deposits must be sought elsewhere. Indiscriminate archaeology, therefore, may not achieve good results, besides being a considerable expense for the community.

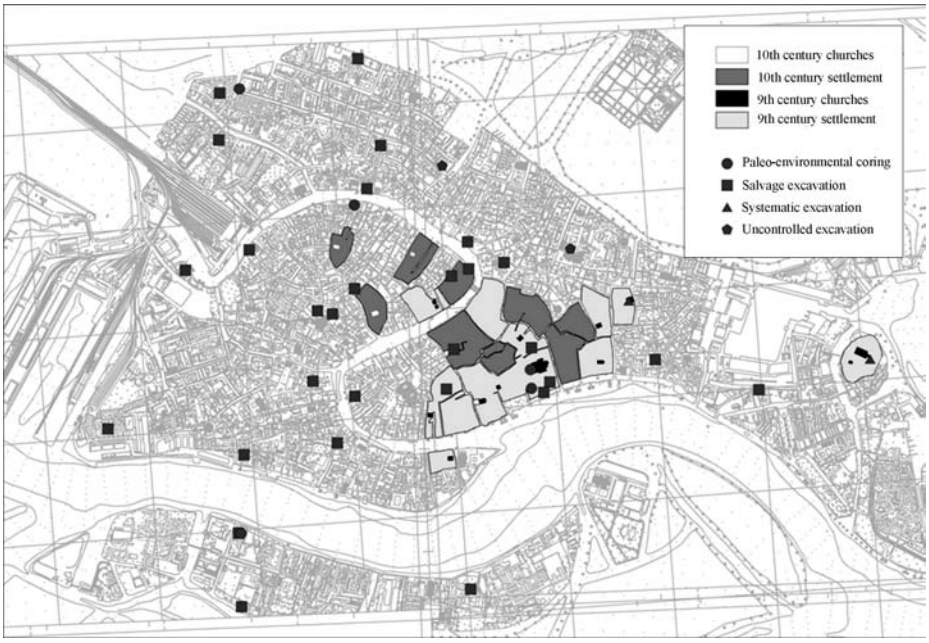

Fig. 16. Excavations in Venice with settlements known from written sources

5.2. The characteristics of the archaeological contexts

So what do we wish to know about these places? That is, what kind of archaeology is needed to enable the source material to give us further, and better, understanding of the early Middle Ages? I believe the main objectives we must set ourselves are those of defining the extension of these settlements and also their structural features (the type of houses, the materials used) and the functional organisation of places; then it will be interesting to assess aspects of 'material culture', that is, potential social and economic markers.

Concerning the extension, some hypotheses may already be made; these are based upon written sources (as in the case of the Rialto in the ninth and tenth centuries[36]) or else on the compilation of specific archaeological data (as that of Comacchio, for example). The clearest and most plausible idea remains that of the Cittanova site; but is this model transferable to the other sites?

With regard to the structure and organisation of the settlement, the archaeological data are still scarce, if not non-existent. The excavated houses are still few and date back to late antiquity (as in Torcello) or between the tenth and twelfth centuries (as in

36 Ammerman 2003.

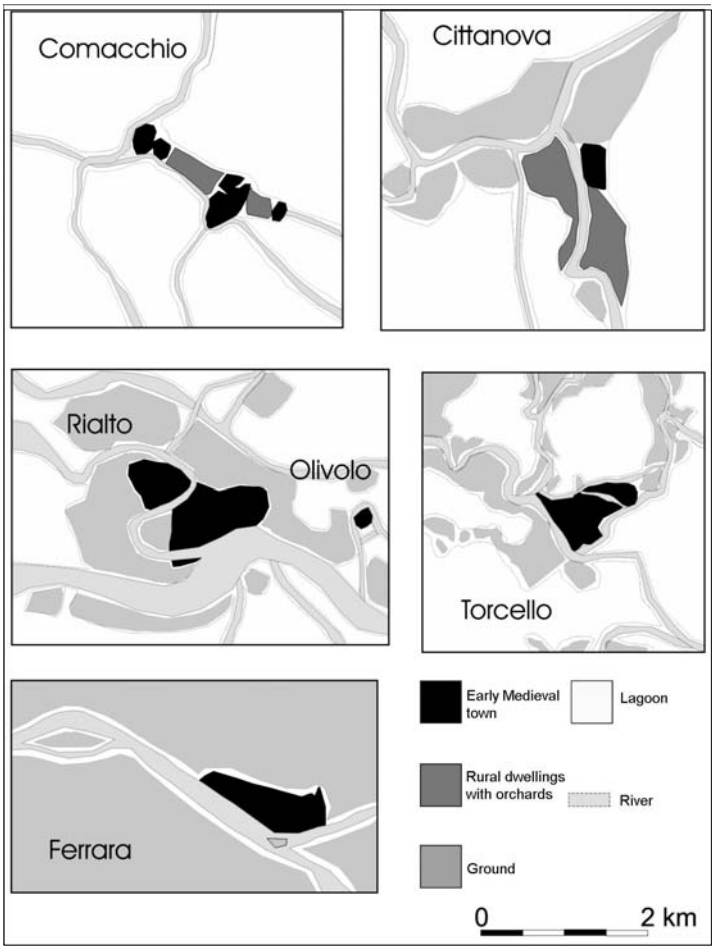

Fig. 17. North-Eastern Italy: conjectural extensions of some early medieval towns

Ferrara). A common feature of these places is their position on a waterway (Fig. 17). In the case of Cittanova, the impression given is that former agricultural plots constituted the basis for the arrangement of new dwellings. A similar development is plausible also for Rialto and perhaps for Ferrara. We know more about the harbours. In Comacchio, although in a partial, fragmentary way, excavation has been made of, perhaps, the most important harbour yet known of in Northern Italy. Finally, regarding handicrafts, these are at present only found in the Venetian lagoon (furnaces for glassmaking in Torcello in the ninth century).

Finally, the characteristics of 'material culture'. Up to now economic markers for these periods have been seen only as coins or, indirectly, investments made in the con-

struction of church buildings. These methods have their use, even though they are often based on non-archaeological records and are often unreliable: for instance, the revision of information on the foundations of the Venetian churches made by McCormick on the basis of Dorigo.[37] However, attention has been focused recently on the features of some materials that seem to be typical of the eighth and ninth centuries: amphorae, found well beyond the seventh century (from the Venetian lagoon area);[38] some unglazed pottery with combed decoration, also dating back to the seventh-eighth centuries and which at present may be compared with central Italian products; lastly, single-fired glazed ware, some perhaps imported, others (from the ninth onwards) made in this area – even though we do not know yet exactly where.[39] These products are recorded, in various quantities, in the places we have been discussing, with some differences, and the future will show whether the type of research developed in the individual areas is important and of the proper kind.

The overall picture which emerges at the level of material records may be fragmentary and thus rather disappointing at present. However, it would be ungenerous to blame archaeology this incomplete ability to inform ourselves about the past, for which we alone are responsible.

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37 Gelichi 2004; McCormick 2001.

38 Toniolo in print.

39 Gelichi/Sbarra 2003.

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Rome in the ninth century: the economic system*

Paolo Delogu

The economic history of Rome in the period between the fifth and the ninth centuries has been described as a process of reduction from the status of central point in a world economy to that of a regional capital – in fact the capital of a region that was smaller than modern Lazio.[1] Both the archaeological and the written records show that in those centuries the city increasingly came to rely only on local resources, as regards food supply and artifacts of various kinds.The process reached its peak in the eighth century, contemporary with the establishment of the temporal government of the popes.

The most characteristic symptoms of this process are the *domuscultae* that were established by the popes in the second half of that century. They were large farms, or compounds of farms, directly administered by the Roman church, with the aim of supplying the papal house and the various officials of the papal administration with agrarian products and meat.[2] The same tendency to self-supply is seen in the economic policy of other Roman ecclesiastical institutions, such as monasteries, hospitals and diaconies, all of which endeavoured to obtain large estates that had to provide food and other commodities for the consumption of the personnel and for institutional tasks such as charity and the maintenance of the ecclesiastical buildings. The same can be surmised for the urban lay society.[3]

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* Helen Patterson has revised the English text of this article. The author is sincerely grateful to her for her friendly help.

1 Durliat 1990, 155, note 296, 161; Marazzi 1993.

2 On *domuscultae,* see Marazzi 1998, 235-261; *idem* 2003. On the reserved destination of their products: pope Zacharias establishes the *domusculta Sancta Caecilia*, "*quae videlicet domum cultam usui proprio, dominicae videlicet rationis, descripsit*"; the same pope *"obligavit usui ecclesiae permanendum*" the other *domusculta* Galeria and the "*massae*" *Antius* and *Formias* (*Lib. Pont*. 224, I, 434-435); pope Hadrian I, establishing new *domuscultae*, states "*tantummodo in propriis subsidiis et cotidianis alimentis predictorum fratrum nostrorum Christi pauperum cuncta proficiant atque perenniter erogentur*"; "*in usu et propria utilitate sanctae nostrae Romanae ecclesiae perenniter permaneant*" (*Lib. Pont.* 328, I, 502).

3 Cf. Delogu 1993; Noble 2000, 70-72. Economic self-sufficiency of the ecclesiastical establishments, for instance: Gregory II presents the basilicas of St Peter and St Paul with "*praedia et*

This redimensioning of the economy of the city and its territory to local production is confirmed by the archaeological evidence that shows how the import of food from distant countries gradually declined during the seventh and eighth centuries and ceased completely in the ninth.[4] The numismatic record adds further support to this picture and to our perception of the city's economic system. In the second half of the eighth century Rome suffered a heavy monetary crisis. The local mint produced gold and silver coins with an increasingly reduced content of precious metal; by the end of the century the Romano-Byzantine monetary system was abandoned and the popes, who in the meantime had become the rulers of Rome, ordered the mint to produce only one silver denomination, modelled on the Carolingian *denarius*.

However, in the ninth century the new Roman silver coins circulated very little in everyday life.[5] This suggests that recourse to the market was limited; the essential needs of daily life were probably provided for by self-supply of the landowners, whether individuals or institutions; at the lower levels of society, there may have been non-commercial distribution of goods, on behalf of the dependants of ecclesiastical

oliveta ... pro concinnatione luminariorum" (J.E. 2184); Gregory III establishes the monastery dedicated to the holy Stephen, Laurence and Chrisogonus: "*in quo monasterio pro sustentatione ibidem ... praedia et dona atque familiam largitus est*" (*Lib. Pont*. 197, I, 418-419); the same pope restores the diacony of Ss Sergius and Bacchus "*concedens omnia quae in usu diaconiae existunt, statuit perpetuo tempore pro sustentatione pauperum in diaconiae ministerio deservire*" (*Lib. Pont*. 201, I, 420); Hadrian establishes two new diaconies "*concedens eis agros, vineas, oliveta, servos vel ancillas et peculiis diversis atque rebus mobilibus, ut de reditum eorum crebro lusma diaconiae perficientes pauperes Christi refocillentur*" (*Lib. Pont*. 545, I, 509-510); similar provisions of the same pope in *Lib. Pont*. 337, I, 506; 347, I, 510; 351, I, 511; Leo III rebuilds a hospital *in Naumachia* and "*predia etiam illic urbana vel rustica pro alimoniis Christi pauperum seu advenis vel peregrinis ... obtulit*" (*Lib. Pont.* 412, II, 28); similar measures taken by Paschal I: *Lib. Pont*. 434, II, 54; 439, II, 57; 442, II, 58.

On the economic self-sufficiency of the diaconies, see also Bertolini 1968, 373. So far the economic basis of the Roman lay people in the ninth century has been little investigated. No doubt the nobility and the urban middle class based their economy on landed property, see Marazzi 1998, 206-235; *idem* 2001, 57. On the analogy of the ecclesiastical economy, it seems quite likely that the produce of the private estates was primarily intended to supply the owners with food and other essential commodities. On the relevance of local production for the urban people: when, on December 791, the Tiber flooded the Roman country "*nec serere pars maxima Romanorum valuit ipso tempore, et pro hoc imminebat tribulatio magna*" (*Lib. Pont*. 356, I, 513). On the agrarian use of large parts of the Roman urban territory in the eighth-ninth centuries, see Santangeli Valenzani 2003, 228-230. Bread was usually home-made in Rome: Johannes diaconus, *Vita Gregorii*, IV, 97 (P.L. 75, 239).

4 Romei 2004. It is worth noticing that large vessels, suitable for the transportation of foodstuffs, were not produced in Rome and its region during the ninth century, see Patterson 1993.

5 Rovelli 2000; *eadem* 2001.

and lay lords as well as the poor and foreigners.[6] As regards food supply, it is likely that the market played a subsidiary role; agrarian surpluses may have been sold on the market only on special occasions;[7] the market may have been more important for pottery, tools and other handicrafts – though these were also produced within the seigneurial system of the great landlords[8] – or for raw materials such as wood and others.[9] In general, one can imagine that market activity took place mainly in the form of direct sale from producers to consumers, without commercial mediators. Traders of supplementary commodities may well have existed, but in the absence of relevant evidence it is unlikely that they were the members of a professional group dedicated to commerce.[10] In my opinion, a pattern of this kind explains the scanty occurrence of

6 Patrons and charitable institutions as distributors of primary resources: Stephen II establishes the *xenodochion in Platana* that was to feed a hundred poor men daily (*Lib. Pont*. 228-229, I, 440-441); Nicholas I orders daily meals for Roman disabled people as well as weekly subventions for the poor (*Lib. Pont*. 600, II, 161); more references above, note 3. S*cholae* as corporated bodies that administered financial and alimentary resources: Leo IV on the consecration of the new Leonine City near St Peter gave "*magnam sive Romanis sive diversis nationibus ... rogam*" (*Lib. Pont*. 535, II, 125) if *nationes* refers to the *scholae peregrinorum*; Stephen V (885-891) finds that "*horrea simul et cellaria vacua inventa sunt, et quid erogaret clero et scolis non habebat*" (*Lib. Pont*. 644, II, 192); *scholae* as collective toll payers (for economic activities?): Marinus I (882-884) "*scholam Saxonum in Roma morantium pro amore et deprecatione Aelfridi, Angulsaxonum regis, ab omni tributo et telonio benigne liberat*" (Asser, *De rebus gestis Aelfridi*, 71, 53-54).

7 A letter of pope Stephen V to Anastasius, bishop of Naples (y. 886), exemplifies the relation between the usual and the exceptional alimentary supply of a town (J.L. 3414): the pope threatens that he will have the Neapolitan crops destroyed in retaliation for the bishop's rebellious attitude, "*et non dicas quia si domnus apostolicus veniens messes nostras deleverit, habemus alias provincias, unde labores habere possimus; nam nos et Romam, Sardiniam, Corsicam et totam Christianitatem contra te claudemus, ut nullo modo recuperare valeatis*". In this late document Rome appears as a potential exporter of food.

8 Artisan production in the estate of Monte Gelato: Potter/King 1997, 92, 368 (pottery kiln). Patterson 1991, 136 believes that other rural estates too produced their pottery.

9 Firewood purchased in the town: Iohannes diaconus, *Vita Gregorii*, IV, 96 (P.L. 75, 238).

10 A Roman citizen went to Beneventum "*negotiandi gratia*" y. 827 (Einhard, *Translatio*, I, 3, 241), but nothing can be deduced about the nature (import, export, primary or luxury wares?) and the regularity of such enterprises. When Geary 1990, 45 speaks of a "highly organized group of relic merchants" based in Rome, c. 830, he is quite aware that this commerce was then illegal; people involved in it acted as smugglers. Probably not by chance, different Frankish sources from those years refer to the same persons as providers of Roman relics for the Frankish churches; the commerce may have been the business of one or more clever adventurers who happened to establish a network of relations with Frankish clergy in search of relics. So much seems to result from the episodes narrated in Einhard's *Translatio* as well as in Rudolf's *Miracula sanctorum*, c. 3-4, 331-333. Surely other relic-thieves sold relics in Rome on a lesser scale, but it is difficult to think of them as the members of a "professional group" plying a regular trade.

money in the archaeology of everyday life in Rome, without excluding a certain level of exchange. Luxury goods are a special case and will be discussed later.

On the other hand, the tendency towards direct consumption did not mean the loss of technical abilities or the decline of an urban ideology. Archaeology shows that in the eighth and ninth centuries local pottery production maintained high quality standards and there were even innovations with the introduction of new ceramic types and techniques, as is revealed by the well known Forum Ware.[11] In the same period a new form of private housing came into use: two-storey houses, totally independent from the surviving remains of ancient buildings.[12] Also monumental building activity and artistic production underwent significant developments from the end of the eighth century till the middle of the ninth. The popes then dedicated themselves to the restoration and maintenance of the urban infra-structures, such as the city walls and aqueducts; above all they endeavoured to embellish and richly endow the churches and other ecclesiastical buildings of Rome, because these represented the monumental face of the city, in its qualification as the religious and liturgical centre of western Christendom.[13]

Some years ago, I maintained that the wealth invested by the popes in their building activity did not derive from the city's economy, but mainly from the revenues that they extracted from their landed property and the exercising of public jurisdiction over a territory stretching from Ravenna to Beneventum. This income was increased by the gifts of pilgrims and, on special occasions, by donations from emperors, kings, prelates and distinguished lay people; these donations were sometimes extremely rich. Not by chance, the most intense periods of papal expense coincide with such special provisions of wealth.[14] This hypothesis seems to me still to stand and to explain the special features of the Roman urban economy.

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11 Romei 2004.

12 Santangeli-Valenzani 2004.

13 Delogu 1988; Noble 2000.

14 Delogu 1988; *idem* 1993; *idem* 1998. Public revenues of the papacy: a *suffragium* was paid to the papacy by the dukes established in various towns of the papal dominion (Leo III's letter to Charlemagne, y. 808: J.E. 2516, in: M.G.H., *Epp.* V, 89, n. 2); Eugene II "*quicquid iusto percipiebat a subditis pondere ... distribuebat*" (*Lib. Pont*. 452, II, 69). The *pactum Ludovicianum* – the treaty concluded in 817 between Louis the Pious and pope Paschal I – mentions *census et pensiones* that the papacy extracted from its territories. The main sources of papal income in the second half of the ninth century are listed in the proceedings of the Ravenna synod celebrated by pope John VIII on 877, August 1. They were: the old *patrimonia* of the Roman church "*... Appiae videlicet, Lavicanense, Campaninum, Tiburtinum, Theatinum, utrumque Sabinense et Tusciae*" together with "*porticum sancti Petri, monetam Romanam, ordinaria vel actionarica publica, Ripam, Portum et Ostiam*"; moreover "*... monasteria, cortes, massas et salas tam per Ravennam et Pentapolim et Aemiliam, quam per Tusciam Romanorum atque Langobardorum et omne territorium Sancti Petri constituta*". The synod stated that "*... haec omnia in usum salarii sacri palatii Lateranensi perpetualiter maneant, ita ut solitos reditus et angarias perpetualiter ... absolvant*" (J.E. p. 394 in: Mansi XVII, 15-17, 337-340). It is probable that the first two groups

It is quite likely that papal wealth had a significant impact on urban economic life; for their building activity the popes needed craftsmen, such as masons, painters, goldsmiths, and labour; they injected wealth into the urban society, when paying wages or ordering special commodities; on occasions they also distributed coins to the clergy, the nobles and the people of Rome, as a ceremonial expression of their sovereignty and largesse.[15]

supplied the papacy with monetary income from leasing of lands, rights of jurisdiction and *telonea*, whilst the third group with seigneurial rents and services. Gifts of the Carolingian emperors: *Lib. Pont*. 377, II, 7-8; 532, II, 123; 569, II, 159; 600, II, 161; *Annales regni Francorum*, y. 796, 64; Einhard, *Vita Caroli*, c. 27, 198; Thegan, *Vita Hlodowici*, c. 8, 222; *Annales Bertiniani*, y. 869, 188 (Lothar II). Gifts from other princes and magnates: *Lib. Pont*. 423, II, 33; 574, II, 147-148; 575, 148; 602, II, 162; 608, II, 164; 639, II, 185; tributes from Anglo-Saxon kings: Offa king of Mercia granted 365 *mancusi* yearly (Leo III's letter to king Coenulf of Mercia y. 797, J.E. 2494, in: M.G.H., *Epp.* IV, 187, n. 127); the same king Coenulf forwards 120 *mancusi* (Leo III's letter, y. 802: J.E. 2511, in: Guillelmus Malmesburiensis, *Gesta regum Anglorum*, I, c. 89, 130; cf. Guillelmus Malmesburiensis, *Gesta regum Anglorum*, I, c. 88, 128); king Ethelwulf allots a yearly tribute of 300 *mancusi* to Rome (Guillelmus Malmesburiensis, *Gesta regum Anglorum*, II, c. 109, 158).

15 Papal payments for public works, for instance: Gregory III restores the Roman city-walls, "*alimoniam quoque artificum et pretium ad emendum calcem de proprio tribuit*" (*Lib. Pont*. 202, I, 420); Hadrian I restores the Roman city walls, "*ubi et multa stipendia tribuit, tam in mercedes eorum qui ipsum murum fabricaverunt, quamque in ipsorum alimentis, simulque et in calce atque diversis utilitatibus ...*" (*Lib. Pont*. 326, I, 501). See also Noble's reflections on this subject in Noble 2000. Papal distributions of money: Leo III pays again the *roga* to the Roman clergy; a usage that had been interrupted since Gregory III's times; cf. *Lib. Pont*. 359, II, 1; the *roga* was paid also by Paschal I: *Lib. Pont.* 431, II, 52. Other forms of monetary distribution: Eugene II (824-827) "*quicquid iusto percipiebat a subditis pondere, non solum pupillis ac viduis, sed etiam divitibus incessanter omnibus distribuebat*" (*Lib. Pont*. 452, II, 69); Leo IV on the feast of the Octave after the Assumption Day, "*omnes qui aderant huius celebritatis plenius argenteis erogavit*" (*Lib. Pont*. 508, II, 112); the same pope, inaugurating the Leonine City near St Peter, "*cunctos nobiles Rome multiplicibus donis, non tantum in auro argentove, sed et in sericis palleis honoravit et ditavit*" (*Lib. Pont*. 535, II, 125); the same pope consecrating the new city *Leopolis*, founded by him, "*non modicam manibus propriis prae amoris magnitudine universo populo rogam distribuit*" (*Lib. Pont*. 550, II, 132); Benedict III asks the Anglo-Saxon king Ethelwulf on his visit to Rome "*ut facias roga in ecclesia beati Petri apostoli publica*"; consequently the king gives gold to the clergy and the nobles, as well as "*minutum argentum*" to the populace (*Lib. Pont*. 575, II, 148); Hadrian II, still a priest, receives together with other priests "*a sanctissimo papa Sergio consuetudinaliter denariis XL*" (*Lib. Pont*. 613, II, 173); prophetic dreams saw the same Hadrian II "*more apostolico in basilicis Lateranensibus aureos erogare*" (*Lib. Pont*. 614, II, 174).

Yet these provisions do not seem to have either modified the basic tendency to the self-sufficiency of urban society or to have stimulated the market. Monetary wealth simply existed alongside real property; a large part of it was hoarded, as reveal the catalogues of ecclesiastical treasures; otherwise it was used either for increasing the estate, by buying and renting lands and houses, or for purchasing luxury goods. Also, it is not clear how large was the monetary stock available to Roman society. Payments and wages may have been limited, because they were probably integrated or substituted by gifts in kind or by the privileged leasing of lands; labour was often extracted as a corvée from the dependants of churches and monasteries, or as a public duty from the subjects of the papal government; finally, the total output of the Roman mint is unknown, and may have been modest.[16]

In short, the economic structure of ninth century Rome looks like a local system, mainly self-sufficient, in which production and consumption basically met with one another; nonetheless the local society was prosperous, and the living standards satisfactory, but this depended more on the effects of the papal presence, than on surpluses or profits freely produced by Roman society. In this sense the system could be termed a "patriarchal economy".

Such a model is now called into question; recent studies have maintained that the city of Rome was connected to a network of commercial traffic that exceded local or regional dimensions; consequently the market has been credited with a much more important, even a fundamental, role in the urban economy.[17] Important archaeological

16 Craftsmen as subjects of ecclesiastical institutes: Iohannes diaconus, *Vita Gregorii*, IV, 90 (P.L. 75, 235): the *familia* of the Roman monastery of St Andrew includes, besides the monks, a cook, a carpenter, a baker as well as other lay people. In a building enterprise of pope Hadrian I, manpower was supplied by the towns of Lazio as well as by the ecclesiastical estates "*cum sumptibus dapibusque apostolicis*" (*Lib. Pont*. 355, I, 513; also 341, I, 507); Ostia was fortified by Gregory IV "*cum suis hominibus*" (*Lib. Pont*. 477, II, 82); the walls around St Peter's basilica were built by Leo IV with manpower recruited "*de singulis civitatibus massisque universis publicis ac monasteriis*" (*Lib. Pont*. 532, II, 123). It is possibile that the employees of the papal administrative offices were paid at least in part with privileged leasing of lands from the papal *patrimonia*: *notarii* and other officials are mentioned as grantees of lands of the Roman church in the registers of pope Gregory II and Zacharias (respectively J.E. 2190-2228 and 2297-3202). The "*massa de vestiario domnico*" cited in *Regestum Farfense*, n. 656, y. 1012 (vol. IV, 53) and *Regestum Farfense*, n. 1026, y. 1079 (vol. V, 29), may have been an appannage linked to the office of the papal *vestararius* together with other urban estates; see Galletti 1758, 9-22, 38. However the methods of rewarding papal employees in the early Middle Ages have not yet been sufficiently investigated. For the, probably modest, output of the Roman papal mint see Grierson/Blackburn 1986, 263; Rovelli 2000, 99.

17 The importance of the market in the Roman economic system of the ninth century has been recently vindicated for instance by Paroli 1996; Noble 2000; McCormick 2001, 618-626.

evidence for this assumption is the Roman ninth century pottery that has been found in various coastal places along the north Tyrrhenian sea, from Liguria to Corsica and to Provence.[18] This demonstrates that Roman artifacts travelled outside the Roman district, although at the moment the number of finds is modest and the circumstances of the transport unknown. One may hypothesize an interregional circulation of wares, whose importance and frequency are still to be ascertained.

Other clues, taken from the written sources, are more significant for asserting that Rome had the role of an active market and was integrated in an international trading network. These are as follows.

In the last quarter of the eighth century and in the first half of the ninth, large quantities of Byzantine and Oriental precious textiles reached Rome. This would seem to demonstrate that Rome was connected to the Mediterranean trading network that supplied such sorts of luxury wares, probably together with others, such as spices, that have left no trace, either in the written or in the material sources.[19]A further important clue is the gold currency available in the city long after the papal mint had ceased to coin gold. Since the Roman sources sometimes use the term *mancusi,* which the majority of scholars take as referring to Islamic gold coins, this would seem to confirm that Rome not only imported, but also exported luxury wares, that were paid for with the gold currency that has left its trace in the sources.[20]

The modern concept of the balance of trade seems to play a prominent role in the assumption that ninth century Rome was a lively international market. The contemporary influx of luxury wares and gold currency seems to presuppose that Rome exported wares as valuable as, or even more valuable than, its imports; otherwise it would be difficult to explain the presence of *mancusi* in the city. But the question is: what kind of Roman wares were likely to be appreciated in the distant lands that produced luxury textiles and gold coins?

The pottery found along the Tyrrhenian coasts was a commodity of low intrinsic value, that could scarcely counterbalance luxury imports. Moreover, it has been found in countries where the usual currency was the Carolingian silver *denarius*, whilst it has not been attested, so far, in southern Italy or Sicily, the lands where gold coins circulated. We do not possess any further evidence of Roman products being exported

18 Paroli 1993; *eadem* 1996.

19 Delogu 1998.

20 Gold coins mentioned in Roman documents between the end of the eighth and the ninth centuries, see McCormick 2001, 814; additional references below, note 30. A discussion of these documents *ibid.*, 335-342.

to the South and the East; and we can speculate that textiles, jewelery and other handicrafts, that were definitely made in Rome,[21] could hardly be appreciated on the eastern markets, where the same wares were produced, probably with higher standards. Provincial artifacts, like the Roman ones probably were, are more likely to have circulated, if they ever did, on inter-regional circuits, like those of the pottery, or to have been appreciated by the western pilgrims visiting Rome and its sanctuaries.Consequently the only sensible explanation of the Roman balance of trade remains the same as is usually put forward for the entire Carolingian West in its commercial relations with the East: that is the export of human cattle, the slave trade.[22] In fact two texts from the eighth century refer to the purchase of slaves in Rome and the Roman region; but they both show that the buyers were foreigners – Venetians and Greeks – and that the popes repressed the trade and persecuted the traders.[23] Afterwards, throughout the whole of the ninth century, there is no further evidence referring to Rome as a slave market. This is probably not by chance: the popes, who were Roman sovereigns and Christian priests, could not allow Christian people to be sold as slaves to the Infidels; in this they were supported and even controlled by the Carolingian emperors.[24] Smuggling cannot be excluded, of

21 Handicrafts in Rome in the ninth century: cloths, Delogu 1998; stone-carving, Paroli 1998; metalwork, Ponzo 1996; Ricci 2001b. So far nothing is known about the organization of artifact production in Rome during the ninth century. It seems unlikely that the workshop of the *Crypta Balbi*, that ceased to function at the end of the seventh century (see Ricci 2001a), offers a valid pattern for the ninth century organization, because of the profound changes that the administrative and economic conditions of Rome underwent in the meantime. Given the modest level of standardization of Roman ninth century pottery, Patterson 1993, 323 believes that it was produced by a variety of workshops, each operating on small scale in Rome as well as in the rural territory.

22 So McCormick 2001, 618-622; 625-627. The different evaluation of the Roman case does not lessen my admiration for McCormick's major work, in which Rome is but a single element.

23 *Lib. Pont*., *Zacharias*, 222, I, 433; Adrian I's letter to Charlemagne y. 776 (J.E. 2426 in: *Cod. Carol.*, nr. 59, 584).

24 Charlemagne forbids that *mancipia christiana* were sold outside the Italic kingdom: see *Capitulare Mantuanum* y. 781 (M.G.H., *Capitularia* I, n. 90, c. 7, 190). In Lothar I's *pactum* with the Venetics (y. 840), the latter promise never to buy or sell *homines christianos* subject to the Italic kingdom or to transport them "*ut propterea in potestatem paganorum perveniant*" (M.G.H., *Capitularia*, II, n. 233, c. 3, 131; the same agreement is renewed in the *pactum* of Charles III, y. 880, M.G.H., *Capitularia*, II, n. 236, c. 3, 139). Hadrian I's letter to Charlemagne, quoted above, is a reply to the king's queries about rumors relating that slaves were being sold in the Roman territory. The popes always regarded redemption of prisoners and slaves among the main offices of their charitable activity: cf. *Lib. Pont*. 431, II, 53 and 643-644, 192, concerning respectively Paschal I and Stephen V. John VIII asks the *principes Sardiniae* to release those *captivos* that certain Greeks had redeemed from the Saracens' slavery, only to sell them anew in Sardinia (J.E. 2983, y. 873; in: M.G.H., *Epp*. VII, n. 27, 288); the same pope rescued by military action some people taken in captivity by the Saracens (J.E. 3008, y. 875, P.L. 126, n. 334, 939).

course, but it remains difficult to imagine that in the ninth century the slave trade and a notorious slave market were a structural feature of the Roman urban economy. Even in southern Italy the slave trade, that at the beginning of the ninth century was fuelled by the wars between the Roman-Byzantine coastal cities and the Lombards of the interior, by the middle of the century seems to have become the business of Saracen marauders, who kidnapped the inhabitants of the country to sell them in the markets of North Africa. Perhaps this way of self-provisioning calls into question the assumption that a regular trade of human beings was run directly by south Italian merchants.[25]

In fact, the balance of trade is not the only possible explanation for the eastern textiles and gold coins which arrived in Rome. According to the sources, the popes were great buyers of precious textiles, that they distributed to the Roman churches for their liturgical adornment, or gave to the Roman nobility, as a mark of honour and alliance. The huge quantities of silk and linen cloths imported into Rome may be explained within the patriarchal economy that I have described above. Drawing from their large financial resources, the popes made their demand of precious wares known through their political and institutional relations. This is well documented: for instance, in 851 pope Leo IV asked a *judex* of Sardinia to buy the filament produced in the island by certain marine molluscs and to ship it to Rome, because it was needed to decorate the ceremonial dresses of the pope and his optimates; the price did not matter.[26] In this case, as in others, the papal demand resulted in the influx to Rome of the requested wares; so the trade was largely set in motion by papal commission, though part of the wares could be bought by Roman nobles or by rich

25 On the slave trade in Southern Italy and expecially in Bari, see McCormick 2001, 628-630; 637; 770-773. Though it cannot be excluded that the Campanian maritime towns took part in the slave trade directed towards Africa, one must also note that such an activity is not mentioned in John VIII's letters condemning in general terms the *foedus* of those towns with the Saracens. The content of the *foedus* may be deduced from the letter of the Italian emperor Louis II to the Byzantine emperor Basilius I. Louis II deplores the fact that the Neapolitans supply the Saracens with "*arma, alimenta et cetera subsidia*", that they guide the Saracens in their raids along the coast and give them shelter in the Neapolitan port. Concerning the slave trade, the emperor condemns the Neapolitans because they "*unanimiter* [with the Saracens] *arma contra Christianos ferant et dimicent, et si quos fidelium capere possunt, Saracenorum manibus tradant, cum ipsis ad bella uno studio procedentes*" (*Chron. Salern*., c. 107, 119). It seems likely that the Neapolitans joined the Saracens in their raids and did not prevent them from taking the prisoners to Africa, but they do not appear as autonomous slave traders. Similarly John VIII condemns Atanasius bishop of Neaples because of the *pactum* that the bishop has made with the Saracens "*pro turpis lucri commodo ... de praeda eorum partes recipiendo*" (J.E. 3346, y. 881, P.L. 126, n. 321, 950). In his turn the Lombard chronicler Erchempert charges the Greeks (*Achivi*) with raising slaves in southern Italy to sell them to the Saracens, but he does not mention south Italian traders being involved in the business (Erchempert, *Historia*, c. 81, 264).

26 J.E. 2611 in: M.G.H., *Epp.* V, 596 n. 17.

pilgrims. Consequently, one need not imagine that exports of corresponding value were necessary to balance the imports. The imported wares were paid for by the financial resources of privileged purchasers; and the traders took away gold and silver coins. One should also note that the eighth and ninth century sources never mention Roman merchants operating on the international scale; on the other hand, the popes frequently complained about the lack of Roman ships and sailors;[27] the traders mentioned by the Roman sources in the eighth century are "Greeks", perhaps from Sicily,

27 Hadrian I regrets that he has neither "*navigia ... nec nautas*" (J.E. 2426 in: *Cod. Carol*., n. 59, 584); on the other hand Leo III reports to Charlemagne that "*coniunxit ad nos unum navigium nostrum cum aliquibus Grecis hominibus*" (J.E. 2527 in: M.G.H., *Epp.* V, 99, n. 8, y. 813). However no Roman ship took part in the battle of Ostia y. 849. A few decades later, John VIII informs that he is having "*dromones… cum ceteris navibus*" made to defend the coast (J.E. 2966, y. 872, P.L. 126, n. 336, 939), but at the same time he appeals to the people of Amalfi to remove the Saracens from their refuge in the Circeo promontory (J.E. 2960, P.L. 126, n. 344, 942; in the same letter he speaks of "*Graecorum nostrorum naves*"); in 877 he asks the Greek *baiulus* Gregory to send at least ten battle ships to keep the Arab pirates away from the Roman coast (J.E. 3092, P.L. 126, n. 73, 727; cf. J.E. 3091, P.L. 126, n. 72, 725); later on he entrusts the Amalfitans with patrolling the coast from Traetto to Centumcellae offering to pay ten or twelve thousand *mancusi* for this (J.E. 3126, 3127, y. 878, P.L. 126, nn. 99, 100, 749-750. See also J.E. 3278, y. 879, P.L. 126, n. 250, 877, urging the Amalfitans to give back the *mancusi* they had received "*pro defensione terrae sancti Petri*" without fulfilling the task). Greek *dromones* helping against the Saracens: J.E. 3303, y. 879, P.L. 126, n. 286, 900. J.E. 3323, y. 880, P.L. 126, n. 296, 909; J.E. 3327, y. 880, P.L. 126, n. 301, 914. Possibly the pope refers to these Greek ships, rather than to Roman ones, in his letter of September 879 to the Amalfitan *praefecturius* Pulchari, where he speaks of "*dromones nostri*" (J.E. 3281; P.L. 126, n. 253, 878 = M.G.H., *Epp.* 7, n. 217, 879). Similarly the *dromones* transporting John VIII to Genoa and to Provence on May 878, came from Naples (Auxilius, *in defensionem sacrae ordinationis papae Formosi*, c. 4, 63). Still in 885 Stephen V asks Emperor Basil to send ships to defend the "*portus maritimave loca contra Agarenorum populationes*" (J.E. 3403).

It seems likely that the popes endeavoured to provide for the defence of the Roman coast by means of inland strongholds, rather than by war fleets: Leo III co-operates with king Pippin for the defence of "*litoraria nostra et vestra*" (J.E. 2515 in: M.G.H., *Epp.* V, 88, n. 1, y. 808); Leo III assures Charlemagne that he is providing for the defence of the coast (J.E. 2524 in: M.G.H., *Epp.* V, 96, n. 6, y. 813); Gregory IV fortifies Ostia, threatened by Saracen raids, *"pro populi ac liberatione patriae*" (*Lib. Pont*. 476-477, II, 81-82); in 846 the Roman *prudentiores*, on being informed that the *Mauri* were preparing an assault, summon "*subiectas civitates et adiacentiis eorum, ut omnes hostiliter festinantes venirent ad maritima littoralia custodienda*" (*Lib. Pont*., *Vita Sergii II*, xliv, II, 99); Nicolas I re-builds and fortifies Ostia and establishes there a garrison of "*promptos ad bella homines*" in order to defend Rome against the Saracens (*Lib. Pont*. 607, II, 164).

and they were progressively substituted by the Amalfitans in the ninth century.[28] Islamic merchants, if they ever came to Rome, must have been an exception.[29]

The second anomalous factor of the economic system – the gold money available in Rome – need also not be explained by the suggestion that it was the return for Roman goods exported to distant Mediterranean markets. It should be highlighted that *mancusi* – whether or not this term always refers to the Islamic dinar – appear only in part of the Roman written records. Alongside them the sources mention other gold coins, like *tremisses* – at that time still minted in Beneventum – and *solidos domnicos* – probably Byzantine imperial coins. In addition, there are references to silver *mancusi*, a money of account without any coined equivalent, whose very mention may show that in everyday life gold *mancusi* were rare.[30]

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28 Greek traders of unspecified provenance mentioned in Hadrian I's letter to Charlemagne (J.E. 2426 in: *Cod. Carol*., n. 59, 585). Greeks repeatedly appear as informers to Leo III about events in Sicily and the Byzantine empire; see for instance J.E. 2526 in: M.G.H., *Epp.* V, 97, n. 7, y. 813: the pope receives a letter from the Sicilian *patricius* as well as news from a *missus* of his; J.E. 2527 in: M.G.H., *Epp.* V, 99, n. 8, y. 813: the pope gets news from a *graecus quidam* who came together with an envoy of the Sicilian *patricius*. The Amalfitans are mentioned in the *Liber Pontificalis* only with the battle of Ostia, y. 849, when they still seem to be relatively unknown to the Romans. Amalfitans as frequent visitors to the Roman port in John VIII's letters: see below, note 34.

29 McCormick 2001, 622-625 gives great importance to the text of Yakut ibn Abdallah (y. 1218-1228), recording an earlier testimony by Walid ibn Muslim of Damascus, died in 810, who in his turn reported the tale of a Muslim merchant who narrated that he had been in Rome and described the city and its markets. In my opinion the testimony does not deserve special credit, not so much for the late date of the final witness, as for the fact that he is transmitting second hand information of a dubious nature (Walid ibn Muslim reports what the merchant told him, God knows how reliably, given the nature of the description of Rome made by the merchant, many aspects of which are found in other texts of the Arabic imaginary geography; cf. Miquel 1975, 368-374, 491-492). One should also note that prior to McCormick, Yaqut's text was never considered a reliable witness on Roman commerce, although it had been translated into Italian since 1877 (Guidi 1877, 181).

30 The evidence amounts to but a few items. Without any aim to completeness, I remember that *mancusi* as real money are mentioned in the life of Hadrian I (*Lib. Pont*. 344, I, 509) as well as in the life of Sergius II (2,000 *mancusi* being the simoniac price for a bishopric; *Lib. Pont*. 493, II, 98). Further evidence for gold money consists of a handful of private acts transcribed in the Register of the Subiaco monastery; cf. *Regesto Sublacense*, n. 111, y. 758?; n. 29, generically dated to the ninth century; n. 55, y. 821; n. 60, y. 837; n. 87, y. 857; n. 83, y. 866; n. 116, y. 897; furthermore a grant by Leo IV to St Martin monastery in Rome, y. 854 (J.E. 2653; Marini, *Papiri,* 14). Only one piece of this evidence (*Regesto Sublacense*, n. 60) refers to gold *mancusi*, whilst another to silver *mancusi* (*Regesto Sublacense*, n. 196, y. 876, written outside Rome). *Mancusi* at John VIII's time: not specified alloy: J.E. 3116, 3117, y. 878, P.L. 126, nn. 96, 97, 747-748 (1,400 *mancusi* + a supplementary sum); J.E. 3126, 3127, y. 878, P.L. 126, nn. 99, 100, 749-740 (10,000 *mancusi*); J.E. 3278, y. 879, P.L. 126, n. 225, 877; silver mancusi: J.E. 3139, y. 878, P.L. 126, n. 117, 771 (a tribute of *viginti*

In short, it seems that the gold currency available in Rome in the ninth century had various origins. The bulk was probably formed by the monetary stock hoarded up in the Byzantine period and then released, perhaps to make up for the new silver money that may have been insufficient or undervalued. This stock was enlarged by the revenues that the papacy received from the regions where gold money was still in use: the former Byzantine Exarchate and the Lombard and Byzantine provinces of Southern Italy.[31] Furthermore, gold money in Rome seems to have been reserved for buying or renting lands and houses or for luxury purchases; but the total amount of the stock was probably limited and gradually it became exhausted; gold coins did not circulate outside the city and even within it their use seems to have ceased by the end of the ninth century, because from the beginning of the following century estate transactions were regulated only in silver or in non-monetary equivalents, like everywhere in Western Europe.[32]

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quinque millium in argento mancusorum annualiter payd to the Saracens); J.E. 3308, y. 879, P.L. 126, n. 288, 901 (a grant of *decem millia mancosorum argenti* to be paid yearly to the Amalfitans). On the other hand, the same John VIII threatens the Ravennates with a fine of *mille byzanteos* (not *mancusi*) should they disobey his orders (J.E. 3164, y. 878, P.L. 126, n. 178, 813).

31 Gold currency in the Ravenna territory in the ninth century: *Breviarium ecclesiae Ravennatis*, docs. 20-22, 26, 28, 45, 46, 72, 76, 125, 126, 138, 139, 145, 162, 175, etc. Gold coinage in Southern Italy during the ninth century: Martin 1983; Rovelli 1995; Day 1997. A set of gold denominations stored in Montecassino's treasure c. 840 are mentioned by *Chronica sancti Benedicti Casinensis*, c. 7, 473; on the treasure itself see Citarella/Willard 1983. Papal landed property in South Italy, where rents in gold could come from: "*patrimonia Neapolim sita*" (Paul I's letter to Pippin, J.E. 2364, in: *Cod. Carol*., n. 37, 550, y. 764/66); Hadrian I asks Charlemagne for help to recover "*nostrum ... patrimonium quod ibidem in territorio Neapolitano ponitur*" (J.E. 2428, y. 779-780, in: *Cod. Carol*., n. 64, 591); "*patrimonium beati Petri ... in Neapoli*" (J.E. 2428, y. 779-780, in: *Cod. Carol*., n. 64, 591); "*episcopia, monasteria et curtes publicas*" in the Beneventan duchy handed over to Hadrian I (J.E. 2464, y. 788, in: *Codex Carol*., n. 84, 620); the same pope claims the lands that the Roman church had been given by Byzantine emperors and *patricii* "*in partibus Tusciae, Spoletio seu Benevento atque Corsica simul et Savinensae patrimonio*" (J.E. 2423, y. 778; in: *Cod. Carol*., n. 60, 587). "*Patrimonium Kaietanum*" (*Cod. diplom. Cajet*., n. 3, 5; n. 7, 13); "*patrimonium Beneventanum et Salernitanum*"(*pactum Ludovicianum*, y. 817, in: *Capitularia*, I, n. 172, 353. On the reliability of this document see Noble 1984, 300-308). The popes also exerted a form of authority over Capua thanks to a donation made by Charlemagne (*Cod. Carol*., n. 82, 616; *Cod. Carol*., Appendix, n. 1, 620; *pactum Ludovicianum*, 353). See also the texts quoted above, note 10. Other remittances in gold: John VIII urges Anno, bishop of Freising, to send the rents due to the Roman church, both in "*aurum aliasque species*" (J.E. 2980, P.L. 126, n. 1, 651).

32 This results from the series of the ninth and tenth century documents transcribed in *Regesto Sublacense*. Other Roman monastic archives have preserved documents only from the beginning of the tenth century; they confirm that only silver coins were then in use, but do not allow us to determine exactly when these became the sole real currency. It is worth stressing that no hasty conclusion can be drawn from the fact that gold, either weighed or in coins,

This general system, that in my opinion accounts for the existing evidence without forcing it, probably underwent a progressive transformation during the second half of the ninth century. In this period the *domuscultae* seem to have ceased to function. The last mentions of them do not go beyond the central years of the century and their archaeological traces fade out by the end of the century.[33] During John VIII's pontificate (872-882) references are found to tributes and tolls paid by the Amalfitans in the Port of Rome, a fact that suggests the existence of commercial enterprises, independent of papal demand and therefore taxed.[34] The same pope, who also relied on fiscal revenues from the urban port of Ripa on the Tiber, had close relations with the Amalfitans to whom he also paid tributes in order that they patrolled the coasts of Lazio against the Saracen raiders. This should show that the Amalfitans were a real presence in the Roman horizon, unlike other Campanian traders, whose domain of action was probably more restricted.[35]

The transformation of the Roman economic system speeded up dramatically in the last two decades of the ninth century, when the crisis of the Carolingian empire seriously endangered public order in Italy and among other consequences made it difficult for the popes to collect their revenues. The contemporary papal lives in the *Liber Pontificalis* make dramatic references to this state of affairs, when they report the total shortage of cash and the apostolic basilicas deprived of maintenance and lighting.[36] In those conditions the papacy ceased to be the dispenser of wealth and the motor of long distance trade for Roman society; disorder in the economic and social structure followed; for example the urban aristocracy endeavoured to get hold of the papal lands and rents. An additional factor of crisis may have been the possible growth of the Roman population; a fact that, if real, could have impaired the social equilibrium

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continues to be mentioned in the penalty clauses of the documents in the tenth century. Rovelli 1992 has convincingly demonstrated that in these documents prices reflect the usual currency, whilst fines are always expressed in species of very high value, that surely existed, but were rare and did not normally circulate. The solemnity and deterrence of the penalty clauses were thus increased, but these clauses cannot be seen as representative of the actual circulation at the time.

33 Potter/King 1997, 426; Christie 1991, 187.

34 John VIII's letter to Marinus and Pulchari of Amalfi, promising to relieve them of the fiscal burdens that were being imposed upon them *ultra consuetudinem* (J.E. 2960, y. 872, P.L. 126, n. 344, 942); in his letter to the Amalfitans (J.E. 3308, y. 879, P.L. 126, n. 288, 901) the same pope promises to pay an annual tribute to them and to exempt them from the "*teloneum quod in portu nostro dare debetis*". See also J.E. 3278, y. 879, P.L. 126, n. 250, 877.

35 Cf. the papal letters quoted above, notes 25 and 34. In this period falls also the episode of count Gerald of Auxerre, who sometimes between 879 and 909 bought precious clothes in Rome at a price much lower than the current price in Pavia (Oddonis *Vita Geraldi*, I, c. 27, in P.L. 133, 658).

36 *Lib. Pont*., *Vita Stephani V*, 643, II, 192. In general for the history of Rome and the papacy at the end of the ninth century, see Llewellyn 1971; Wickham 2000.

guaranteed by the previous system.[37] It is quite likely that the entire economic system felt the effects of the changing urban structure and adapted to the new conditions, though for the moment it seems difficult to perceive the direction of change. A relevant datum is the exhaustion, at the end of the ninth century, of the archaeological evidence from Portus, the coastal landing place of Rome; a fact that hints to the demise of its usual functions. This demise was to last a long time, given that rich archaeological evidence does not re-appear in Portus before the eleventh century.[38]

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37 At present, the growth of the Roman urban population at the end of the ninth century is a matter of speculation more than a proved fact. The hypothesis primarily rests on the general theses concerning the growth of the population in the West: see for instance Toubert 1973, 321-322, 328-329; Toubert 1990; Verhulst 2000, 23-28. However, as regards Rome, the hypothesis seems now supported by the evidence for building construction in public or deserted quarters, that took place in the late ninth-tenth century, see Paroli 2004, 33-34.

38 On the archeology of Portus in the ninth and tenth centuries, see Paroli 2001. Lidia Paroli calls my attention to the fact that, parallel to the demise of Portus, important archaeological traces suggest that economic life was being reorganized within the city of Rome. Such traces are the already mentioned building construction of the quarter along the *vicus Iugarius* and the production activity that was pursued there in the tenth century. Both circumstances may reveal a market oriented activity now located in the core of the city. I thank Lidia Paroli very much for her important suggestions.

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Production and circulation of silver and secondary products (lead and glass) from Frankish royal silver mines at Melle (eighth to tenth century)

Florian Tereygeol

Melle is a small city of Poitou-Charentes (West of France) (Fig. 1). It was the most important production site for new silver in the Frankish Empire during the Carolingian period. We actually know of more than twelve thousand deniers and oboles minted with the name of Melle, which are kept in different public collections in France, Germany and Belgium.

The aim of this article is threefold. First, I wish to show that the dating that is usually accepted should be called into question. The site is not only Carolingian, but also Merovingian. Second, I intend to discuss the techniques for extraction inasmuch as the archaeological sources allow us to understand them. And third, I will show that while silver ore is the main product extracted from this mine, the Carolingian metalworkers supplemented their income by making lead and glass products, known as "lissoir" in French, "smoother" in English and "Glattglass" in German. These products circulated throughout the Frankish Empire.

There are three written sources that illuminate the production of silver at Melle. These documents are the "Gesta Dagoberti", the "Edit de Pître" and the "Annals of Saint-Bertin". In the "Gesta Dagoberti" we learn that Melle owed a rent of eight thousand pounds of lead every two years to the Abbey of Saint-Denis, near Paris.[1] It is an apocryphal text of the ninth century. When the "Edit de Pître" was promulgated in 864, minting was limited to ten workshops throughout the empire. Melle is among them.[2]

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1 *Gesta Dagoberti* 1888, 419: *denique eodem tempore plumbeum quod ei ex Metallo censitum. in secundo semper anno solvebatur, libras octo millia ad cooperiendam eamdem supra dictorum beatorum martyrum ecclesiam concessit…*

2 *Capitularia Regum Francorum* 1897*, n 273 (MGH, Leges, sectio II), art. 12 : Sequentes consuetudinem praedecessorum nostrorum, sicut in illorum capitulis invenitur, constituimus, ut in nullo loco alio in omni regno nostro moneta fiat nisi in palatio nostro et in Quentovico ac Rotomago, quae moneta ad Quentovicum ex antiqua consuetudine pertinet, et in Remis et in Senonis et in Parisio et in Aurelianis et in Cavillono et in Metullo et in Narbona.*

Fig. 1. Location of Melle

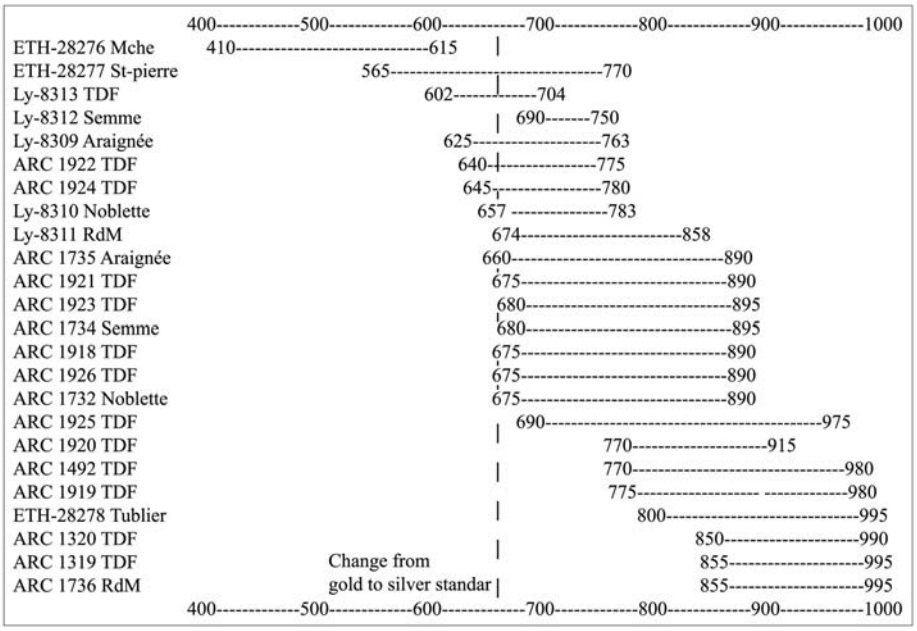
Finally, in the Annals of Saint-Bertin, we learn Melle had been attacked by Vikings in 848.[3] These sources show that interest in lead and silver sparked their production during the Viking invasions.

These documents cluster around the tenth century. From numismatic studies, we think that exploitation lasted from the eighth to the tenth century, and a few sources even belong to the twelfth century. In fact, the mint with the name Melle only stopped with the English conquest of Aquitaine in 1187.

Archaeological investigations and the mine's extraction methods permitted us to compile a table with dates easily. Because underground miners extracted material with fire, we have the ideal material for radiocarbon dating: the charcoal. Several attempts at dating were done both underground and in workshops such as the foundries (Tab. 1).

We can draw a few conclusions. First of all, the period of explotation is longer than those known by written sources. It extended from the sixth century to the end of the tenth century. So instead of three hundred years of exploitation, we have instead five hundred years. It is now generally accepted that the mines of Melle were exploited starting in the Merovingian period. It seems that the change to the feudal system stopped the exploitation quite brutally. We have nothing dating to the eleventh century. The mine seems to disappear around the year one thousand, as if the accession of the Capetian dynasty had caused the ruin of these mines. Secondly, these dates raise an

3 *Annales de Saint-Bertin* 1964, 55*: Nortmanni Metallum vicum populantes, incendio tradunt.*



Tab. 1 Radiocarbon dating

economic issue about the transition to issuing silver coinage during the last quarter of the seventh century. So we can definitively say that Melle was a centre for mining and smelting during the Carolingian and Merovingian periods.

This is not the place for a detailed explanation of the production process, which is complicated but included less than seventeen steps to the finished product.[4] A few archaeological excavations at Melle allowed us to study a mine, a workshop of ore preparation and a smelting work site. Concerning the mine, we had to choose among the dozen of mines still accessible in the entire deposit, which is a mineralized karst. This means that rainfalls dissolved the limestone and the silver galena mineralized into the empty spaces thus created. This galena is a lead sulphide and contains 1-3 % silver. This content could be seen as low but it is in fact normal for this kind of ore. The field is not far below the surface (a few meters only), and the crumbling mineral made the digging of ventilation shafts easier.

The extraction technique used for the mining was obvious. Everywhere we looked, we could see cupels and ovoïd coal-faces, which show the use of fire-setting. This method consists of putting logs along the wall of the mine in which they wanted to extract. Then the fire was lit and due to the warmth, the stone burst into fragments of variable density. When the fire died out, the miners cleared the extracted stone to the

4 Téreygeol 2002.

surface. The stone that had not been loosened by the fire was hammered down. The stone extracted by fire and tools was sorted underground, and only the interesting part was cleared. Few experiments allowed us to gain a greater understanding of this technique.[5] We could easily see the coal-faces in the mine, but also the crushing stations alongside circulation ways where sand accumulated, and as well the air shafts, which are marked by strong calcification. Fire-setting necessitates a multiplication of air shafts to facilitate the extraction progress. The areas which are the most exploited are those close to the surface, where shafts are easier to dig.

When the ore is on the surface, it goes through several preparatory steps before smelting. Five washing-works are known around Melle, one of which has been excavated. Near the opening of the shaft, the workshop had no running water, which is necessary for a part of the washing operation; it seems that instead the workmen preferred to carry the water rather than the ore. The area surrounding the workshop organised the working space well. The different pits had been classified by family. Sedimentological and granulometric analysis of residual sands and gravels revealed three steps in the preparation: coarse washing of the ore and the charcoal, and then sorting and crushing (scheidage). The latter operation is the hardest to envision because of the imbalance between the small size of anvils and the tremendous cubage of sands and gravels. The sorted and ground sands were accumulated on sloping tables, which is also how golden ore was handled.

Melle is characterised by its low quantity of slag. It is so rare that some scholars believe that metallurgy was practised underground, or that it lasted only a short time.[6] We shall see that another theory is possible. The excavated foundry extended over more than six hectares. Only magnetic prospecting could allow our survey to locate the archaeologically richest areas. The discovery of metallurgical structures is limited (just a low furnace and two refining stations). Overall, we discovered an area specifically intended for reprocessing of slag by crushing and washing. Three steps involving metallurgical work could be identified. Those are, in chronological order: smelting, reprocessing of slag and refining of the argentiferous lead. The discovery of a cap of lead oxide is a fourth step, cupellation. Unfortunately, it seems to be situated on a plot of land that is impossible to study.

It is possible to group the productions at Melle into three groups: silver coins, lead and slag. Thanks to chemical analysis and to the isotopic survey of the lead, we are able to follow the production at Melle, beginning with the better tested objects (coins and lead) and moving to the less tested (the smoother).

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5 Téreygeol 2000.

6 De Cressac/Manès 1830: “Il est remarquable qu’on ne trouve, aux environs de Melle, aucune trace de scorie. [...] On pourrait croire aussi que le traitement du minerai y avait lieu dans la mine même, ainsi que son traitement ultérieur: ceci paraîtrait en effet résulter du grand secret que les anciens semblaient mettre dans leur travaux...” pp. 178-179.

Production of deniers and oboles

Three problems are interesting: Is it possible to identify minting activity starting in the Merovingian period? During the Carolingian period, is the silver extracted at Melle used by other mints? And after the year one thousand, are the deniers with the name of Melle still made with silver from this town?

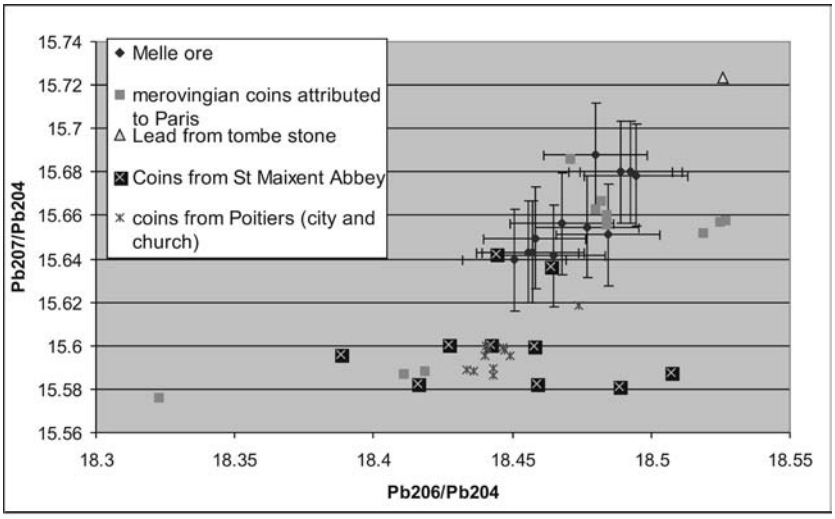
The method of analysis for the coins depends on the comparison of the lead isotopic ratios contained in the silver. Lead is composed of four stable isotopes: ^{206}Pb, ^{207}Pb, ^{208}Pb and ^{204}Pb. The ^{204}Pb isn't radiogenic, and so its abundance has been stable since the formation of the Earth. The other isotopes are radiogenic. The isotopic ratios change with the geological age of the formation of the field with ore deposits and allow us to define a proper domain for every ore. This method is limited on the one hand because the field has to be isolated from its neighbours (this problem doesn't exist for Melle because the nearest field of galena is not of the same age), and on the other hand the objects must be made of one kind of lead (we can have for example the adding of extraneous lead during a re-smelting). Indeed, in case of a mixture of different leads, the isotopic ratios can change and therefore become very difficult to interpret. These analyses require micro-sampling, which gauges the change of weight depending upon the mass of lead available in the sample. The laboratory work was undertaken with TIMS (Thermal Ionisation Mass Spectrometry) under the direction of Doctor P. HORN and S. HOLZ, of the Institut für Mineralogie, Petrologie und Geochemie at the Ludwig-Maximilian University of Munich. The majority of analysed coins belong to the Cabinet des Médailles of the Bibliothèque nationale de France, and the other samples come from Melle or French archaeological collections (Tab. 2).[7]

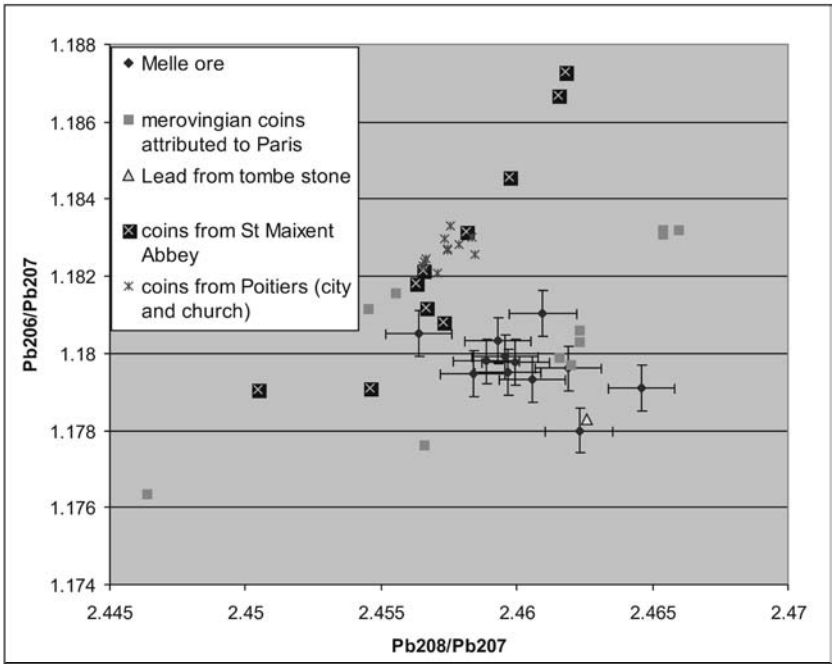
Merovingian minting

The eight Merovingian coins that had been chosen at the outset of this study are linked to a workshop thought to be at or around Paris (Tab. 3). There is also a piece of lead from a tombstone discovered during the excavation of the necropolis of Saint-Pierre de Melle.

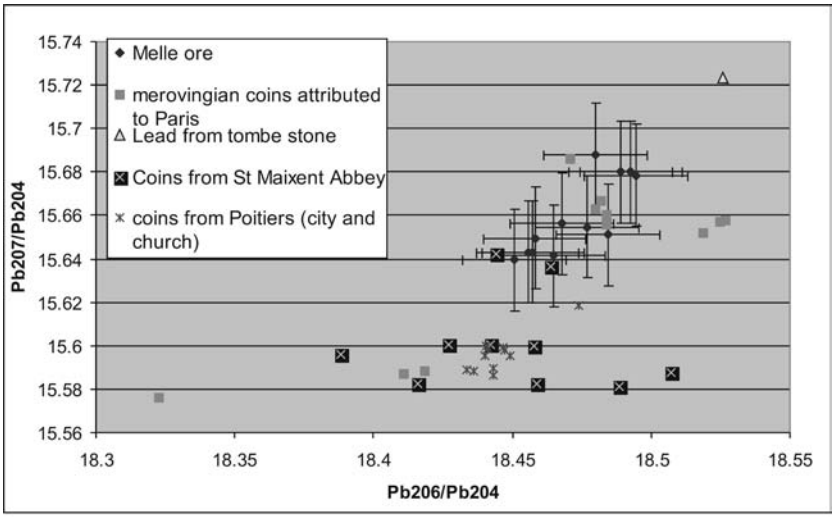
We can conclude from this group that the silver extracted from the mines was intended for minting, although it is impossible to assert that minting occurred on the site of extraction, as is the case for the Carolingian period. If the existence of a mint at Melle cannot be proved, the attribution of these coins to Paris should be seriously called into question. It is indeed difficult to say the silver could circulate to Paris without suffering from any mixing during the journey or in Parisian workshops. Moreover, a great

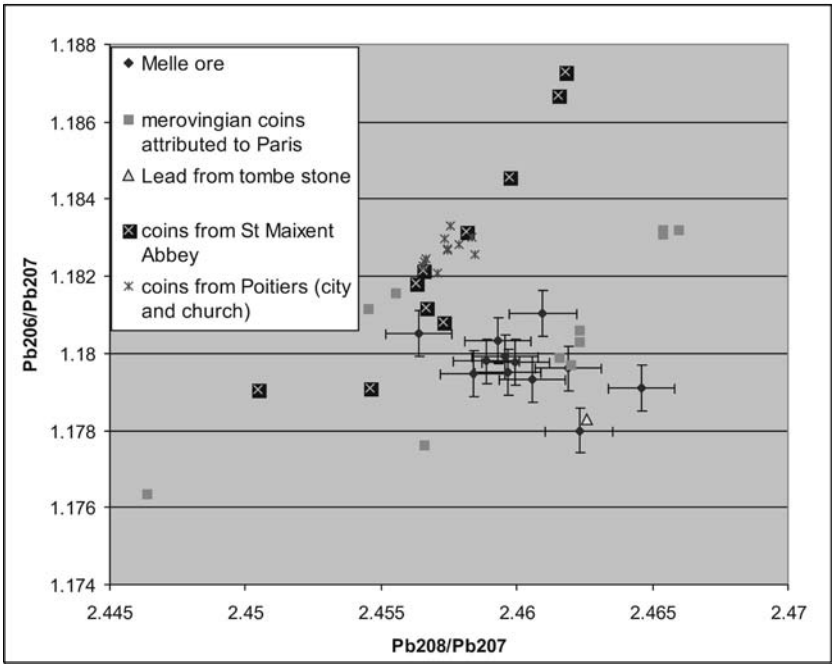
7 This study was made possible by the Cabinet des Médailles et Antiques of the Bibliothèque Nationale de France, which gave us access to the public collection.





Tab. 2. List of isotopic results in ore, coins and lead





Tab. 3. Isotopically analysed Merovingian coins

number of these kinds of coins were discovered in the Western part of France. And at last, the stylistic analysis of the coins does not allow us to distinguish between the coins of Melle and others.

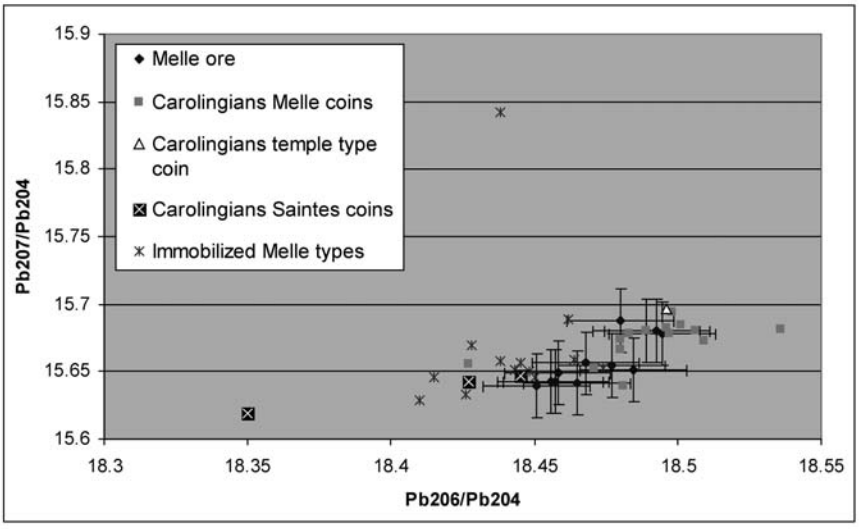
Merovingian minting at Poitiers

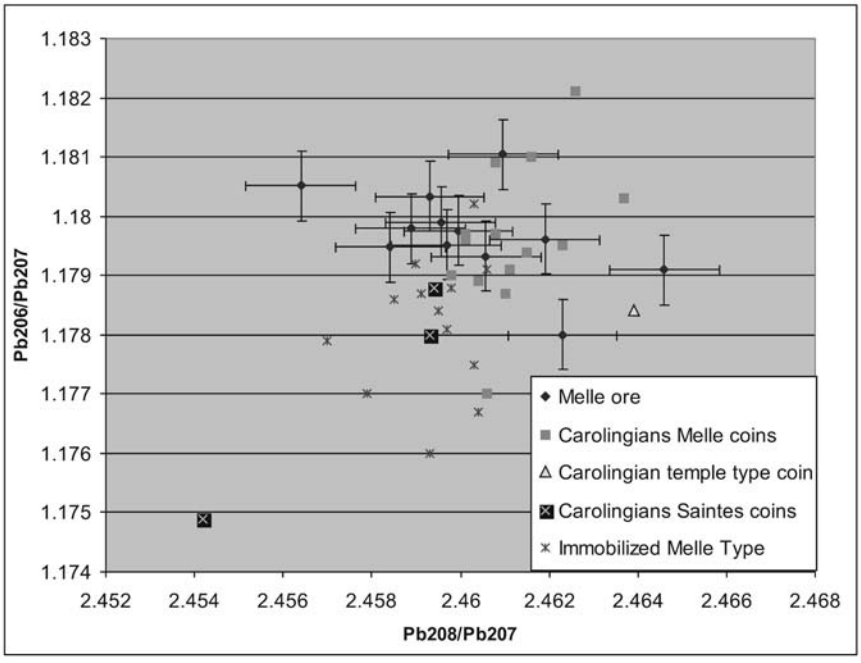
The results of the analysis on the coins of Poitiers exceeded our expectations. Indeed in tables 2 and 3, one can clearly see that there is no correlation between coins of Poitiers and the ore of Melle. However, what is important is the scatter plot, which seems to indicate that the coins had been made with only one kind of silver. This is surprising because of the diffrerent origins of the coins (Saint-Pierre-les-Etieux, Plassac, Nice-Cimiez), their different kinds and different ages. If we rely on the numismatic surveys of the Merovingian period, it is possible that Poitiers got its silver from a primary source that has yet to be discovered. The studies led by Mr Marcoux do not allow us to locate this ore field. The assertion of G. Depeyrot, a French numismatist, is no longer valid: "this production [of Poitiers] can only be linked to the exploitation of the mines of Melle, which had to provide a part of the necessary metal to mint the money".[8] Melle could be a motor in the change to the silver currency, but it does not seem to have supplied all the new metal resources for Aquitaine, and even less so for Poitiers. At this stage of our research, it is easy to formulate another explanation: money-making at Potiers, which numismatists agree is difficult to date, could have been the object of a very fast activity with a homogeneous ore brought to the workshop due to the transition to silver currency. The study of coins from others cities such as Limoges or Tours will certainly provide new evidence to answer this question.

Carolingian coins of Melle and its environs

The Carolingian coins of Melle are all – except for two of them– later than the monetary reform of 793-794 (Tab. 4). Above all, we want to determine when currency that contained no silver appeared; this could provide evidence of the decline of mining, which must have preceded the downturn in workshops. We can draw two conclusions from this group of Carolingian oboles. First, we cannot determine their chronology. Thus it is impossible to use them to illuminate the decline of mining from the Carolingian period. From the small group of coins analysed, it seems the mines of Melle afforded sufficient productivity to provide the necessary silver ore for the functioning of a workshop until the end of its activity, currently dated to the tenth century. Secondly and conversely, the

8 Depeyrot 2001, 11.





Tab. 4. Isotopically analysed Carolingian coins

silver of Melle was also used in Pippin II's minting. It is too early to provide a definitive conclusion to this problem, as just one coin has been analysed. However, this minting puts the political and the economic status of the Melle workshop and its mines under question. Which denomination did Melle use from 839 to 865? Was Charles the Bald the lord of this region for an uninterrupted period or was it an usurpation?

Coins with a fixed form from Melle

Finally, thirteen feudal coins complete this corpus. Their type is fixed, which means that they were minted in identical style from the tenth to the twelfth century. These coins are distinguished by stylistic variations, that is small marks (e.g., circle points, squares), for which no numismatist could at present give any explanation. The isotopic analysis indicates that beyond the typological classification, we have coins with and without silver from Melle. It is impossible to eliminate the theory of a type of currency from Melle recognisable by distinguishing characteristics.

We wanted to observe the coins of Melle's local or regional circulation over time (from the seventh to the tenth or eleventh century). A map of their distribution has not yet been made, but the partial results we have already allow quite a good estimate. Money of Poitou is present in Central Europe, Spain, England, as well as in the North-Eastern Europe. This distribution can be attribuated to the Norman and Viking raids, to the payment of the Danegeld, to classical circulation and to the influence of pilgrims coming from France later in the Middle Ages, carrying a reputable currency. At a regional scale, the quality of the money produced encouraged, as we saw with the fixed type of deniers, minting with the name of Melle in all of Aquitaine. This encompassed the capital Poitou, which produced coins with the mention PICTAVI CIVI on one face and METALLO on the other. The reputation of Melle had encouraged the widespread production of money with the name of its workshop after its closing and the desertion of the mines. We know that the period of the mine's exploitation ended in the tenth century and the workshop stopped production. We have to wait until 1189 and the conquest of Aquitaine by English troups to observe a cessation of minting with the name of Melle – more than two hundred years after the desertion of the mines and the workshop. We can also observe the reputation of Melle in the production of two new kinds of Carolingian currencies showing the suggestive names "Metalum German" and "Metallum Novum". The latter could be translated by "New Melle", or the new ore deposits which could be as productive as those with the "old Metallum". "Metallum German" could indicate a location in the German part of the Frankish Empire, or more likely, a notion of purity. The existence of two workshops named Metallum inside the empire, with qualifying adjectives – probably to separate it from Melle in Poitou – shows both that the workshop of Melle is older, and the reputation it had acquired.

The "Gesta Dagoberti" clearly mentions the lead production of Melle for the abbey of Saint-Denis near Paris, more than four hundred kilometers to the north of the extraction site. The studies on this topic have not met with success, and we cannot locate evidence of these supplies with archaeological or archaeometrical data. Moreover, studies are being conducted on the circulation of the starting with the lead found in the River Charente. It will determine if the lead of Melle had been used in the making these objects. Similar analyses have been made on a Merovingian tombstone discovered at Melle, but results did not allow us to establish a link between this lead and the mines of Melle.

The discovery of an unexpected object – the smoother – raises questions about production at Melle. After the refining of slags, metalworkers obtained two primary materials: metal and slag. The latter is of no discernible economic interest. During excavations of the Carolingian levels (eighth-tenth centuries), we found a "hemispherical object, with a smooth face and of which the general aspect call of it as a big pebble"[9]. The purpose of slag is still in debate. The standard explanation is that it could be used in textile activity, to smooth the fabric.

A corpus of more than eighty samples has been chemically analysed by Bernard Gratuze. These objects are in general of potassic-calcareous glass, but due to the analyses, a discrete group of glass with a different chemical mixture (i.e. characterised by a high ratio of lead) could be distinguished.[10] There were fifteen smoothers in this group. The result of this chemical composition is very hard glass; it is difficult to think it had been voluntarily created by a glassworker. On the other hand, chemical analysis made on the glassy slag and those of the smoothers allows us to establish a link between these objects. The studies of the isotopic ratios of lead made of the Melle's ore, slag and on these objects made of glass produced similar results. This conclusion creates a few problems, particularly since we have found this kind of smoother as far as Novgorod. The care devoted to refining slag and the founding of a specific workshop for this product result more from the will to have a material, the glass, which can be immediately used by the glassworker. The recycling of worked lead, which must not have represented a high proportion in comparison to the directly obtained lead at the end of the smelting, was only of secondary importance. Although the production focused on making lead and glassy slag, the silver-metallurgy at Melle during the Carolingian period was enriched with a second, unexpected by-product: the glass. Within the context of glass-making activity, this discovery occurred in a period of the change from a sodic glass, well-known for all of antiquity, to potassic glass, which characterised medieval glass production. This evolution had been analysed as the result of the weakness of the supply of natron. One of the theories is, that faced with a strong demand for this kind of object, the glassworkers ran out of the usual flux. They were then forced to find another solution in the form of the glass produced by the silver-lead-metallurgy. This innovation could be considered as a local solution (to confront the lack

9 Macquet 1990.

10 Gratuze/Téreygeol/Lancelot/Foy 2003.

of primary material) if these objects were not widely distributed. We know its circulation, although we do not fully grasp its significance.

In conclusion, the site of Melle, by the quality of its remains, can claim to be an essential milestone for the history of technology from antiquity to the late Middle Ages. We understand well the circulation of the Melle currency (which a few scholars consider to be restricted to Aquitaine[11]) and the reputation of the workshop through the written sources and the currencies which took the name of Metallum. The impression we might have of wealth is nullified by the use of slag and the making of smoothers. This economy of shortage makes for a strange contrast with the quantitative importance and the circulation of the Melle currency.

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11 Depeyrot 1994, 92: "…la place que l'on accorde à cet atelier [Melle] reste disproportionnée dans la mesure où l'atelier n'alimentait que les frappes du Poitou."

The hinterlands of early medieval towns: the transformation of the countryside in Tuscany

Riccardo Francovich

1. The disintegration of the antique settlement structure

Archaeological research, carried out for the most part in southern Tuscany, lets us propose a model of the processes that led to the formation of the rural and urban landscapes of the medieval period. This is an integrated model that takes into account microregional differences on the one hand, and new ideas that are constantly derived from fieldwork on the other.[1]

The disintegration of the rural landscape of the Roman period in Tuscany had its roots in the early imperial period. Although this process occurred in different ways over different timescales in a variety of contexts, it had one eventual outcome: the disintegration of the ancient landscape. Archaeological research, mainly in the southern part of the region, allows for the construction of a model of the processes that, between the fourth and seventh centuries, led to a simplification of the settlement network and to a prevalence of nucleated village-type settlements at the centres or perimeters of vast estates. Occasional public and private interventions failed to halt this phenomenon, because they happened without the conditions of political and economic supremacy that had allowed in Tuscany, as in other Italian regions, the development of complex interlinked forms of settlement in the [earlier Roman] countryside. The early medieval countryside was thus formed following a profound and irreversible break with the past. Archaeology now allows us to hypothesise a series of stages in this process; although their sequence can be clearly defined, detailed definition of the stages themselves is still awaited.

The fundamental change is represented by demographic decline and by the concentration of the population in a few villages after the collapse of the late Roman settlement system. This contributed to a process of selection and contraction in the settlement network that affected both the coastal and inland regions; its widespread

1 For a regional overview of the activities of medieval archaeology in the urban and rural spheres, see the "Portale di Archeologia Medievale" on the website for "Archeologia Medievale" at the University of Siena.

nature demonstrates that it was not an isolated event but must have occurred for reasons that were connected, even if the periods of its impact varied. In the southern part of the region this process occurred in the mid-second century, while in the Valdarno we have signs of it appearing in the third century. We can also note a further element of [geographical] differentiation from the mid-fourth century until the Theodosian period (in the region of Pisa perhaps until the start of the fifth century). During this period numerous villas were founded or refounded in the northern area: the productive system in the Valdarno region shows signs of resumption, Pisa became an important port centre, and new sites can be documented between the Arno and Serchio rivers and the Apuane Alps that can be more readily categorised as villages. In the south of the region, however, the process of abandonment and population nucleation continued uninterrupted.

The late fifth century appears, however, to be the first important watershed, the moment in which the fortunes of the traditional Roman countryside altered irreversibly. Between the end of the fifth and the start of the sixth centuries we have clear signs of a profound decline in the settlement network that resulted in its fragmentation into a myriad of small sites of varying type. These often existed without links to the urban centres, which also suffered an analogous process of disintegration in the same period.

A number of developments can be placed within this framework. These include the reoccupation of sites of the imperial period that had been previously abandoned (such as the farm of S. Mario in the area of Volterra), the appearance of small farm-type units in the inland areas, and the abandonment of a large number of sites that had remained active until that moment. Another development was the profound transformation of those sites that continued to be inhabited because they were important for maritime routes, although in some cases (like that of Torre Tagliata in the area of Cosa) these sites were very modest in structural terms and were sometimes reoccupied following a period of abandonment, like many villas on the islands of the Tuscan Archipelago.

Two further phenomena can be placed in the final phase of the disintegration of the late antique countryside: the appearance of cemeteries on the sites of villas or villages, which attest to the permanence of small nuclei in the countryside during the sixth and part of the seventh century, and the reuse of cave sites, as in the tufa area around Sovana and in upper Lazio, typical of the Etruscan period. This process took place during the end of the fifth century, throughout the sixth century and for part of the seventh century. It can be considered a genuine transitional phase between an economic, social and settlement system still linked to the past, and the new forms of habitation that developed in the first centuries of the medieval period, outside a system of fiscal control and under the control of a rather weak rural aristocracy.

In order to better define this process, we can consider that the late antique rural landscape, often based more or less on estates, had retained the earlier social fabric formed around the great properties of the imperial period and the ways in which they

were administered. The Byzantine-Gothic war (535-554) represented a point of no return: the profound devastation suffered by the peninsula struck at the heart of the institutional and social system that had produced this landscape. For this reason, the period between the middle of the sixth and the first decades of the seventh century appears to be a genuinely crucial moment.[2]

2. Vanishing cities, shrinking cities, and fortified cities (second to sixth centuries) (Pls 7-11)

The prolonged disintegration of the "Roman" order of the landscape also affected the most characteristic aspect of Roman society: the city. Tuscany does not contradict the picture established in the best studied cases in Italy, such as Brescia and Verona, even if the quantity of recovered data is much smaller. The cities, which had benefited from the presence of a middle class and its investment of agricultural revenues, entered a crisis during the Antonine period. Corresponding perfectly with the process that can be observed in the countryside, they suffered from a destruction of the urban fabric that physically signified the transformation of both their social and economic basis as well as the concept of *civitas*. However, much remains to be studied and defined.

In fact, if there is a period in the history of the Italian peninsula, and of Tuscany in particular, in which the role of the cities must be defined with clarity, it is that which lies between the late imperial and early medieval periods. However, historical and archaeological literature on this subject is discontinuous and constructed on very fragmentary sources; we could even say that until very recent years, urban archaeology did not exist as a discipline. Archaeology has been carried out in the cities where life has continued, but without establishing a strategy towards a systematic understanding of the transformations that occurred. Meanwhile in the abandoned cities, particularly in southern Tuscany, the deposits of post-classical life, at least until the 1990s, were generally destroyed and still today are neglected.

Two things, however, are certain: between the third and eleventh centuries, the civic order of the cities changed fundamentally, and the use of materials and construction techniques changed from stone to wood and then back again. Other changes can also be seen in the functions of different urban areas as well as in geomorphological sequences with the formation of "dark earth". Above all, however, it was the spatial distribution of the cities in the region that suffered a substantial upheaval in this phase, leading in fact to a marked displacement towards the north of the concentration of urban centres. Tuscany can be divided into two large areas: in the southern part the crisis was earlier and more profound, largely eliminating the existence of urban life, while in the north it

2 An overview can be found in Francovich 2002, 144-167.

came later and did not entirely undermine the foundations of urban settlement (as can be seen from the illustrative maps).

In fact, when the conditions arose for the re-emergence of the cities in the central centuries of the medieval period, Lucca, Pisa, Florence, Siena, Arezzo, Volterra, Fiesole, and Pistoia became high-ranking centres not only in Tuscany, but also in the European sphere. In the southern part, however, the collapse of the Roman towns of Cosa, Heba, Saturnia, Sovana, Roselle, Vetulonia, Populonia and Chiusi left a substantial gap, filled only for a limited period and somewhat later by the presence of Massa Marittima and Grosseto.[3]

Once the parameters of the profound difference between the north and south of Tuscany have been clearly established, we must explain the reasons behind them. Many factors could have had an influence. In the first place, the economic weakness of the greater part of southern Tuscany was countered only in the most intense period of 'romanisation'. Secondly, perhaps already in the early imperial period, the cities of the south functioned as service centres for a population that preferred to reside in the countryside, in the great villas and surrounding villages. A third reason was communication. The Apennine roads all converged on the Arno, navigable for a large part, and perhaps already in the seventh century were also connected with the Francigena (the trans-European pilgrimage route to Rome). The coast was substantially excluded from the great late antique and early medieval routeways. Malaria and increasing marshiness do not appear to have been endemic or decisive factors in determining a demographic decline in the coastal areas before the late medieval period.

Although they were profoundly ruralised and their topography and built environment were altered, Pisa, Lucca, and Florence remained cities between the sixth and seventh centuries, while cities in the south lost the last element that distinguished them from their hinterlands: their role as centres of administration. It is obvious that the process occurred at different rates in each town, as tradition and the conjunction of many diverse factors always played a role in determining the rate at which administrative functions were lost.

The different phases in the dissolution of the ancient city can be placed within this general framework. All the excavations conducted until now point in the same direction and we can therefore assimilate the Tuscan city (whatever the peculiarities of specific cases) into the general model established for central northern Italy.[4] Between the second and fourth centuries, inhabited spaces contracted and the late Republican and early imperial wall circuits became too large. Public building activity reduced until it

3 The most up-to-date results regarding the fortunes of the Tuscan cities between late antiquity and the early Middle Ages remain those presented in Gelichi 1999, although see also Citter/Vacaro 2003.

4 Brogiolo/Gelichi 1998.

disappeared. Restorative interventions may have been carried out under Probus at Lucca and Fiesole in the Severan era and similarly, the baths of Volterra in Vallebuona could have been the subject of a public intervention analogous to the one at the Neronian baths in Pisa but no further examples are known. Lucca must have played a particular role within the late imperial economy because it was the site of one or more sword factories. This could explain the central imperial authority's significant interest in the town.[5]

The only attested public works are statues with inscriptions dedicated to the *potentes* of the moment and some restoration in Lucca, Pisa and Volterra. However there are more consistent archaeological data relating to new buildings of a private character that arose alongside the levels of dark earth and the ruined monuments. In this context we should note the rich *domus* in Luni, the baths next to the east gate in Roselle, the buildings with mosaic pavements in Florence, and the syncretistic cult building in the *forum* in Cosa, all constructed during the course of the fourth century.

The process of disintegration proceeded without interruption. Between the fifth and sixth centuries, the only element apparently contradicting this tendency was the religious euergetism that absorbed the greater part of resources, starting perhaps in the fourth century and certainly present in the fifth. Churches arose everywhere, often occupying public spaces such as the baths in Roselle, the *curia* in Cosa, and the *forum* in Lucca. Sometimes instead they were built in private areas, as were the episcopal churches in Luni and Pisa, while in Chiusi the identification of the early Christian cathedral on the site of S. Secondiano within the city walls has recently been proposed again. These new constructions, even if they might appear to have been part of a revitalisation of the urban fabric, in reality determined new and different centres of gravity and lines of communication.

The Christianization of urban spaces had a further significant impact in terms of the appearance of intra-mural cemeteries that co-existed with the old extra-mural cemeteries of Roman tradition at least until the end of the seventh century. In the course of the sixth century the Tuscan cities, like others in the rest of Italy, fragmented into nuclei and islands [of population], retaining this form until the aristocracy of the late Lombard and Carolingian periods began to re-establish the urban fabric on a new basis.

In Luni, the *forum* must have already fallen out of use in the sixth century when small huts were erected within it. This could be interpreted in two ways: it could indicate a spontaneous private invasion of former public spaces in the absence of a central authority, or conversely, an initiative on the part of the central Byzantine power aimed towards accommodating the population of the countryside in times of insecurity. The vitality of this city, sustained by its marble industry, must have already collapsed in the imperial period, and the great quantity of imported Mediterranean material there must

5 For information relating to these cities and those in the discussion that follows, see Gelichi 1999.

not make us suppose a still-functioning vital urban centre. Luni in the sixth and seventh centuries was a Byzantine fortress, functioning as part of Liguria's defensive system. The finds indicate a military presence that would have required supplies, as did all the Ligurian *castra*, and it is no coincidence that the imports ceased in the mid-seventh century, when the conquests of Rothari brought Liguria into the Lombard kingdom.

Thanks to its extraordinary written documentation, Lucca has always received the attention of historians; it permits the reconstruction of the physiognomy of a city of the late Lombard period as perhaps no other city in the *Regnum*. This has also been a limiting factor, however, because it is only in recent years that a requirement for archaeological research has been demonstrated. It is not surprising, therefore, that many doubts remain regarding the nature of Roman Lucca. Our level of knowledge of the late antique and early medieval city lies between these two poles, although archaeology has started to form stratigraphic sequences through which the city's late antique and early medieval phases can be detected. The levelling in the area of the *forum* by means of the usual *strata* of dark earth signals here, as elsewhere, the transformation of the Roman city. However, it appears that the *cardo maximus* remained in use, because its route is followed by the later via Fillungo. In Lucca the significant toponym *parlascio* could suggest that, as in Pisa and Roselle, the amphitheatre could have been a fortified point used by the Lombards at the moment of their entrance into the city – but the medieval toponym alone is not sufficient evidence for this. However, Lucca is one of the cities that are best imagined as a cluster of isolated settlements. One of these was based around the church of SS. Giovanni e Reparata, while a further more modest example was located in the vicinity of a gate in the Republican wall. Between the end of the fourth and the early fifth century, furthermore, the area of the future church of S. Frediano, outside the Republican wall, was occupied by a productive installation.

Florence, a centre of commerce and manufacturing, was equipped with walls datable to the end of the first century BC, but very soon the area of habitation extended beyond them towards the west and north. The foundation in the fourth century of a praiseworthy church with three naves and a baptistery next to its south door allows us to see a weakening of the third-century crisis and, in this case, the deepening of social differences. Between the end of the fourth and the fifth century there was still a restricted wealthy class able to access Mediterranean products via the River Arno. The city thereafter appears compatible with the model of "islands of settlement": one nucleus was located around S. Reparata to the north, another around S. Cecilia to the south, while a third is indicated by the cemetery of the Syriac community across the Arno at S. Felicita.

The long period of war that afflicted the whole peninsula between the sixth and early seventh centuries helped to accelerate the process of transformation. The cities became ever more like military fortresses, and it is no coincidence that for the Byzantines the term *kastron* was synonymous with *polis*. All the Tuscan cities that remained active, as

well as others like Cosa that had been abandoned, were reoccupied in this period and became fortresses involved in the imperial defensive system. Furthermore, although these interventions appear to have been driven by the need to maintain the ancient urban systems, they in fact acted in the opposite way, eliminating in many cases the small differences still visible between the cities and rural centres. Archaeologically little is yet known of the long subsequent process that led to the formation of the "Romanesque" cities between the ninth and eleventh centuries.

3. The "curtense" transformation (eighth to tenth centuries)

From the middle of the seventh century, a series of transformations reached its conclusion in the countryside, not only in Tuscany but also in the greater part of Europe. The picture generated by archaeology suggests that the period between the first decades of the sixth and the first decades of the seventh century may have been the final moment in the disintegration of the rural landscape of Roman tradition, while the seventh and eighth centuries are generally agreed to have been the period of the formation of the medieval landscape (Pls 12-13).

This period saw the disappearance of the last ceramic production that recalled the forms and technological traditions of late antiquity. New villages of huts were constructed on hill-tops sometimes previously occupied by protohistoric or Etruscan sites but deserted for the entirety of the Roman period, and cult buildings were constructed or reconstructed and embellished with sculptural decorations, whose traces evidently remained as *spolia* in the countryside as well as in the cities. The village became once again the point of reference in the settlement network.[6]

The ecclesiastical hierarchy also played a role in the reorganisation of the countryside between the eighth and tenth centuries. Despite Tuscany's vicinity to Rome, the Christianization of the region was a long process that was completed only with the definitive conversion of the Lombards in the late seventh century. The religious aspect, although important, was accompanied by other factors. Some of them emerge through the lens of archaeology: the necessity to control the territory not only politically, and to coalesce a fragmented population around new centres like churches, parish-churches and monasteries. In this context, it is interesting to note that the churches were often built on the ruins or whatever remained of the villas and the Roman settlements that had been abandoned between the fifth and sixth centuries. This aspect emerges with clarity in two areas where investigations have been more exact – the coastal area between Lucca and Pisa, exemplified by such cases as S. Felicita in Pietrasanta, S. Bartolomeo in Triano and S. Giulia di Caprona, and the hinterland of Siena, exemplified by S. Marcellino in

6 Valenti 2004.

Chianti, S. Cristina in Buonconvento and S. Pietro Pava. However, these should not be treated as isolated examples, but rather as an indication of the new forms through which the residual vitality of the aristocracy still present in the late antique countryside was demonstrated.[7]

The final elements that contributed to the reorganisation of the landscape were the monasteries of royal or ducal foundation. In Tuscany along the via Francigena, the Lombard kings founded a monastery every 30 km, evidently with the aim of controlling both the route itself and the surrounding territory. Every monastery, as illustrated for example by S. Salvatore in Monte Amiata, was endowed with property – often a part of the fiscal patrimony of the Lombard kingdom – and it can be supposed that this disturbed the traditional political-institutional equilibrium. S. Salvatore had, like nearly all the Italian monasteries, a moment of great splendour during the course of the ninth century (which can be seen also in the exemplary case of S. Vincenzo al Volturno), i.e., the moment in which the *curtense* system was growing in strength.[8]

The renewed aggregation of the dispersed population did not occur immediately; it was a long process that evolved in different times and ways according to the micro-regional context. Archaeology can demonstrate the growth of villages of huts placed on hill-tops between the sixth and eighth centuries, inhabited by populations that the archaeological evidence indicates did not possess marked internal social stratification. Looking forward in time, it would be these settlements that would be successful: despite many centuries and transformations, it was the fortified hill-top settlements that would later attract the churches and parishes, and not vice versa.

Social stratification within the hill-top villages becomes evident only at the end of the eighth and in the ninth century, when elite longhouse-type housing or fortified areas in the centre of the village destined for the accumulation of agricultural produce were imposed within the pre-existing context of wooden huts. It is these developments that have been associated with the assertion of new strong powers in the context of the formation and development of the *curtense* system. Already present in the Tuscan documentation for the eighth century, the *curtis* was the rural settlement structure used by seigneurial landowners as a basis for the process of reorganising agrarian assets. This process was completed with the rise of the territorial seigneury, evidenced archaeologically through the massive proliferation of *castelli* starting from the tenth century.

The inversion of the trend followed in the preceding period (sixth to mid-seventh centuries) is intimately linked with changing social and economic conditions in the Lombard kingdom, although an overly optimistic reading has to be refuted. In Italy and beyond, other non-economic factors outweighed the economic aspect of the *curtis*:

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7 Cf. Francovich/Felici/Gabrielli 2003, 267-28.

8 Kurze 1989.

the *angaria* was the manifestation of a relationship of power, not one of economics. Moreover, the *curtense* system only reached its fully developed form in the Carolingian period. It shows a variety of topographic types, from that with more structured *dominico* to that where the *dominico* is absent; certainly at present, the isolated *curtense* farm does not find any confirmation in the archaeological evidence, while there are clear indications of its presence within communities of nucleated villages.

Tuscany is certainly a region privileged by the wealth of its early medieval archival documentation, although it is worth recalling that nearly all the available documentation comes from two ecclesiastical institutions – the bishopric of Lucca and the monastery of S. Salvatore at Monte Amiata – with all the limitations and problems that this entails. This documentation demonstrates that in the eighth century the process of social stratification was still beginning, which accords fully with the archaeological data.

The *curtes* of the bishop of Lucca, distributed in clusters between the Garfagnana and the Maremma, all had more or less the same organisation and were interlinked with one another. The monastery of S. Salvatore at Monte Amiata also had properties dispersed as far away as the sea. These more or less followed the course of the river Fiora and were organised in *curtes*, called *cellule*, that always had one part rented out and one kept under direct management.

The mountainous areas, like the Garfagnana, the Casentino and the Lunigiana, appear to be also characterised by nucleated settlements (*vici/villae*). A similar topographic aspect has also been proposed for the *curtes* of southern Tuscany. This forms the central theme in the debate that is emerging between historians and archaeologists regarding the *curtis*: the transposition into historical terms of archaeological data. The archaeologists interpret the social distinctions emerging in the documents of the ninth and tenth centuries not as an episode within a system still based around dispersed settlements, but as the affirmation of a new social and settlement system that was imposed on a system of pre-existing village communities and that thus calls for a new and more attentive reading of these same sources.[9]

9 On the need for a critical re-examination of the sources, see Francovich forthcoming; for a general evaluation of this phenomenon, see Valenti 2004, XVIII-XXII.

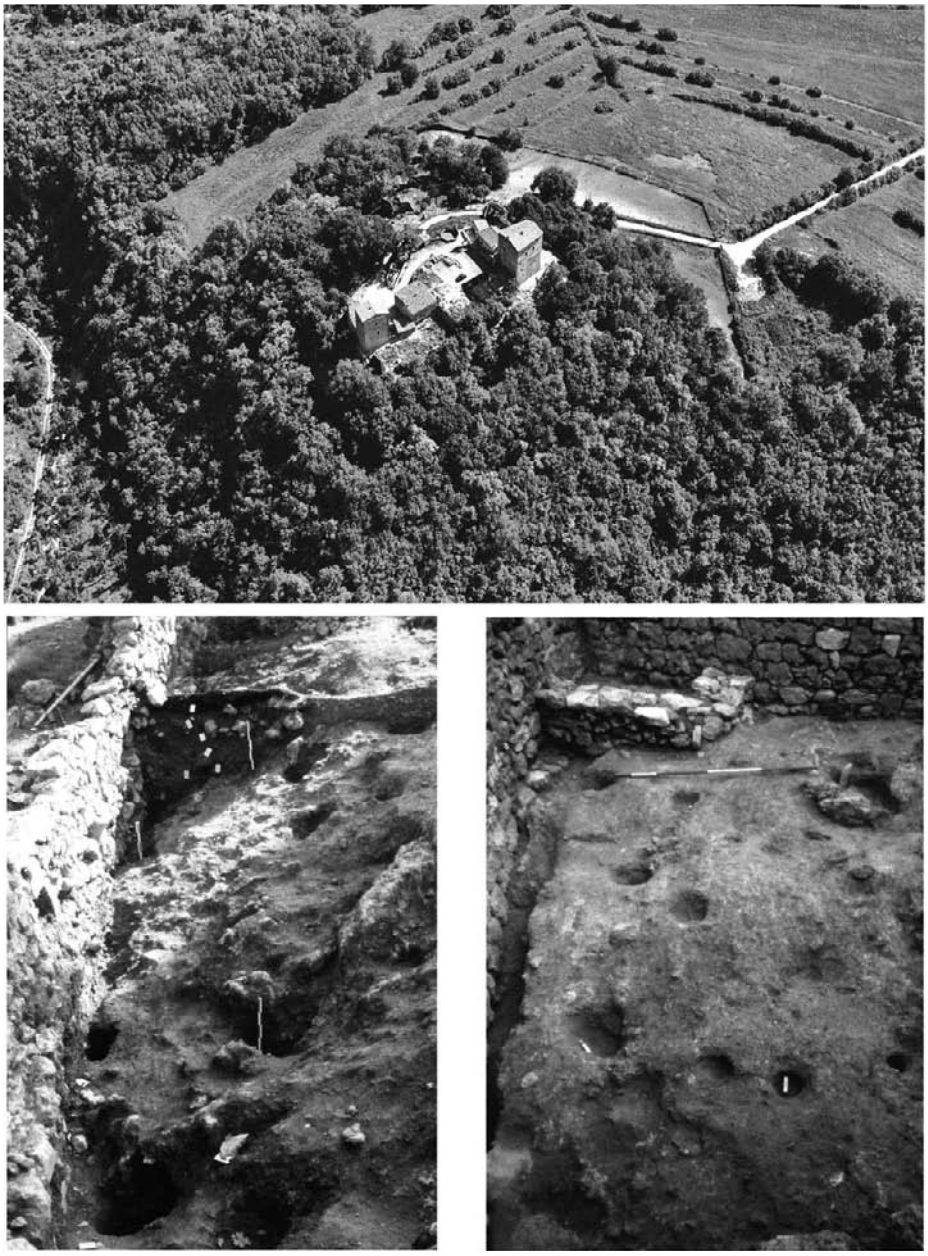

Fig. 1. The castle of Montarrenti - aerial view and details

In Montarrenti[10] (Fig. 1, Pl. 15), the summit of the hill, then the centre of the castle, was occupied by huts larger in size than those discovered on the flanks of the hill and in part intended for the collection of food supplies. The first phase of wooden huts was followed by a phase of mixed construction in stone and wood and by the construction of an enclosure wall. This all occurred well before the site's Romanesque build-up in stone (twelfth century).

In Scarlino[11] (Pl. 16.1), the change is still more evident. Between the end of the ninth century and throughout the tenth, the construction of a frescoed church, the change from huts of just wood to buildings of mixed construction as in Montarrenti, and the construction of an enclosure wall are unequivocal signs of the assertion of a strong power within the original social structure of the village. This should be interpreted as resulting from the establishment of the *curtis* mentioned in 973.

Also in Poggibonsi (Pls 16.1-17.1) between the ninth and tenth centuries, we have clear indications of social differentiation after at least four phases of a socially undifferentiated village. This new situation is demonstrated by the appearance of a "long house" with annex buildings, in which the diet of the occupants appears to be privileged in relation to the rest of the village.[12]

The evidence emerging from recent excavations is still more explicit (if such is possible). The castle of Miranduolo[13] (Fig. 2), attested in documents from the beginning of the eleventh century, began to develop during the course of the eighth century and life continued there without interruption until the fourteenth century. In its early phases, the village was composed of huts with annexes that appeared to occupy the entire summit area of 750 sqm. Around the middle of the ninth century, these spaces (later destined to be the principal manor house of the castle) were redesigned, starting with an impressive excavation of the bedrock, the creation of a deep ditch about 7 m wide, and the erection of an extensive defensive palisade, which in some points was a double palisade.

The settlement must have revolved around an extensive central hut that demonstrates a continuous sequence of restoration and renewal, in part obliterated by the remains of a twelfth-century stone palace. 40 postholes relate to this building, which probably had a rectangular plan around 8 m long and at least 5 m wide (the width that has been revealed up to now), and which is clearly recognisable as an aisled structure. This building was situated in the midst of service structures. It was flanked to the south by a circular hut with a wooden floor in which horn and bone were worked. In the middle of the tenth century, the summit of the hill underwent a new reconstruction that attests to the first *incastellamento* of the hill; the buildings and fortifications were transformed but the

10 Cantini 2004.
11 Francovich 1993.
12 Valenti 1996.
13 Nardini/Valenti 2003, 487-495.

Fig. 2. Aerial view of the castle of Miranduolo

occupied area does not seem to have been enlarged. An enclosure wall was constructed that followed the same course as the earlier palisade that it replaced.

The impressive and monumental remains of the castle of the Gherardesca family in Donoratico[14] (Pl. 17.2) are located not far from the Tyrrhenian coast, a little north of Populonia. The castle is first attested in the second half of the twelfth century, but the stratigraphic sequence commences in the Hellenistic period. The early medieval settlement, extending across the entire surface of the over 8000 sqm of the plateau later occupied by the castle, and consisting of huts at least from the middle of the eighth century, underwent numerous phases of renewal and reconstruction. The sequence recognised to date allows a glimpse of the construction of a palisade; a tract of about 2 m characterised by an alignment of large closely placed posts, in some cases in a double line, was present in the area later occupied by the church. During the tenth century the first wall was constructed, which divided the settlement into two parts still constituted by huts and marked by sparse glazed pottery. The presence of the wall has been interpreted as a division between a productive area under strong seigneurial control and the inhabited area.

In all these cases there is evidence of a progressive topographic reorganisation of the sites and a functional rearticulation of their spaces. To these well defined cases can

14 Bianchi 2004; Francovich/Nardini 2004, 123-144.

now be added that of Castel di Pietra,[15] where the construction of a ditch dividing the area that would later be the site of the twelfth-century manor house could indicate an earlier hierarchisation of the site. The data recovered in the castle of Grosseto[16] also appears to point in the same direction: the development of the city is placed at the centre of the process through which the *curtense* system was established. Therefore, the second phase of huts there could be the echo of the *curtis* recorded in 973 that over the course of a hundred years could have developed to the point of absorbing the economic and subsequently administrative prerogative of Roselle. In the case of Grosseto, therefore, social differentiation was still more marked, leading to the formation of a social class within the community that was antagonistic towards the seigneurial power of the Aldobrandeschi.

4. From the conquest of the hill-tops to the formation of the castles (castelli) (seventh to twelfth centuries)

From an archaeological point of view, therefore, the problem of the *curtis* is intimately connected to the problem of the formation and transformation of the villages, and thus to the process of transition from an estate-based seigneury to a territorial seigneury. The archival documentation available for some sample areas poses a series of questions to which the archaeological evidence can make a fundamental contribution.

In particular, the almost general invisibility of early medieval sites in field surveys is above all a problem stemming from the fact that the *castelli* of the eleventh and twelfth centuries are superimposed on the villages of the seventh and eighth centuries. Over 60 % of the *castelli* investigated archaeologically in Tuscany have furnished clear elements of pre-existing early medieval villages. When we also consider that some of these sites have not been entirely excavated and that earlier deposits often have been destroyed by later occupation, this record suggests, generally speaking, that the formation of villages on hill-tops was not merely one episode among others, but rather a truly characteristic element in the history of the rural Tuscan landscape. Many were successful sites for a long period of time, not uncommonly until the present day.

A second aspect concerns the transformation of village communities into *castelli*. We have seen that the constitution of a *curtense* system can be seen archaeologically in the tangible elements of social differentiation that, between the second half of the eighth and the tenth century, were superimposed upon and modified the fabric of the village communities of the seventh and eighth centuries. Therefore, let us briefly summarise the first archaeological evidence for the reconquest of the hill tops.

15 Citter 2002, 115-168.
16 Francovich/Citter 2000, 87-94.

Once again, the data from Scarlino, Montarrenti, Poggibonsi, Miranduolo and Donoratico are in accord with those from Rocchette Pannocchieschi, Cugnano and Montemassi. This concordance is not so much chronological, as the process occurs at various times between the end of the sixth and the eighth century, with some cases earlier than others, but rather topographic. The levels that precede the phases of the mid-ninth and tenth centuries are characterised by very poor structures – wooden huts that are not always easy to distinguish because of later interventions. We have no doubts regarding the continuity of the occupation of the hill-tops, because in all instances there are distinct phases of postholes that we can interpret as the rebuilding of the wooden structures by every new generation. What clearly emerges is that, in the first phase of the life of these settlements, there are no elements of social differentiation: the huts are all more or less of the same generally small dimensions, and the diet and material culture are undifferentiated. The image that we get is one of small villages composed of communities of peasant shepherds lacking a marked internal social hierarchy. The difference that we have seen emerge in the mid-ninth and tenth centuries, both from written sources and excavated data, is very marked and cannot be anything else other than an indication of a considerable transformation in the nature of these villages.

The "stone-built" phases of the eleventh and twelfth centuries, which generally date to the same period as the first documentary attestation of a *castrum*, constitutes therefore a third phase in the long process of the development of the social fabric of the hill-top villages. Historically, this implies the slow formation of a territorial seigneury through a particularly marked stage (the *curtis*) that coincides with the rise of aristocratic groups and the establishment of large estate-based properties after the crisis of the *possessores* of the late Roman era.

Therefore the *castelli* that we see today are not static elements, but rather a system characterized by complex phases of both formation and development, structurally linked to the population dynamics, and very different from the first early medieval *castelli*, which were expressions of public power and had a marked defensive and military character.[17]

It thus appears evident that the authoritarian direction of the first installation of urban planning at the castles is a clear signal of the power exercised by the aristocracy in the planning stages. In Rocca San Silvestro, the first stone-building phase, datable to between the tenth and eleventh centuries, did not yet feature high-quality construction techniques, which suggests recourse to local manpower. From the end of the eleventh century, however, all the castles investigated demonstrate the construction of defensive curtain walls and towers of regular texture with well-finished stones, certainly the work of master craftsmen from specialised centres who possessed a much deeper knowledge

17 For a comprehensive overview of the dynamics of *incastellamento*, cf. Francovich/Ginatempo 2000.

of the art of construction. This phase, at least for the castles of southern Tuscany, is the other side of the coin for the consolidation of seigneurial power over the castles and their surrounding territories, and can be dated to around the end of the eleventh and the start of the twelfth centuries. These structures, from their marked military and symbolic connotations, are nevertheless very different among themselves in topographic terms: at Rocca San Silvestro and Rocchette Pannocchieschi they encompass the entire inhabited area, while at Castel di Pietra and Selvena we have at present only evidence of modest circuits with one and two towers respectively. The process of organised town-planning certainly started early at Rocca San Silvestro, where it can be placed still in the eleventh or early twelfth centuries, while in Selvena and Castel di Pietra it began nearly a century later. The first stone-built phase at Campiglia Marittima, however, appears to date to a period similar to that at San Silvestro.

The Romanesque fortifications of Montarrenti date to the twelfth century and suggest a fundamental reconstruction of the inhabited area along an orientation already established in the eleventh century at least for the wall encircling the manor house, but with a more marked differentiation of the seigneurial area. In Scarlino, however, the transformation of the built environment from one of wood to one of stone can only be considered complete in the eleventh century.

These data, albeit very summarised, demonstrate that *incastellamento* was not a homogeneous phenomenon. Recent documentary research furnishes a picture that is still more articulated. Above all, during the twelfth and part of the thirteenth centuries in southern Tuscany, the process of nucleation, begun still earlier than the written attestation of the *curtes*, continued further with the development of the castles. In this period new *castelli* were founded or refounded with much larger and denser populations than previously, as demonstrated by the cases of Scarlino, Castel di Pietra, and Selvena, and sometimes went as far as the foundation of new centres. The historical fortunes of these new centres varied widely, with Poggibonsi as a "quasi city", Radicondoli as a demographically important castle, and Montecurliano as a city reduced to a second-rate castle.As with the first *incastellamento,* the promoters of these initiatives, which we can define as a second *incastellamento*, were always the aristocracy. Due to their importance as population centres, these new *castelli* were often planned with regularly ordered dwellings.[18]

One element that emerges with clarity is that the further nucleation of the population into a small number of sites affected the less populated areas in terms of an abandonment of the small and dispersed settlements that still existed and sometimes of certain first-phase *castelli*. This appears to be the case with Selvena and nearby Penna, Seggiano (also in the Amiata region), Camigliano and S. Giovanni d'Asso in Val d'Orcia, and Prata in the iron-rich Massetane hills, to name only a few examples.

18 Farinelli/Giorgi 2000, 239-284.

Therefore, as well as a first and second *incastellamento*, today we can also speak of a first *decastellamento*, distinct from the crisis of the 1300s that knocked down all the first-phase *castelli* not chosen as nodes in the new settlement system. The *castelli* abandoned in this first *decastellamento* are sometimes invisible in the archival documents because they are the works of the minor seigneury. They can, however, be detected with the instruments of archaeology, starting with an accurate investigation of aerial photographs and followed by an equally detailed field survey.

The perspective offered by this new research on the last phases of *incastellamento* necessitates a series of reconsiderations of the traditional models of the relationship between towns and castles, not so much for the evident demographic aspect, but above all in terms of their respective military functions and capacities as administrative centres of the territory. The new and concrete perspective provided by archaeological research for reconstructing the historical fortunes of the forms of settlements allows us to accurately define the character of the discontinuity in the urban and rural order between late antiquity and the early Middle Ages.

The urban and rural landscape of Tuscany witnessed great transformations in the architectural structure of public buildings, the adoption of perishable materials such as wood and earth in private buildings, the disintegration of the topographic order, the traumatic transformation of archaeological stratification in urban areas, or even the abandonment of many towns of antiquity. The inexorable process of the abandonment of the Roman settlement structures and the formation of wooden villages can be identified with the birth of inhabited nuclei on which the *castelli* of stone were planted starting in the tenth and eleventh centuries. These are now new and indisputable documents constructed by ever more sophisticated archaeological research. These facts on the one hand allow us to return to the sources with new interpretative tools and to rewrite chapters of history that seemed consolidated, and on the other open for us a new way to see this vast but not unlimited patrimony of information constituted by the archaeological monuments and areas of the Middle Ages.

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Where is the eighth century in the towns of the Meuse valley?

Frans Theuws

The early medieval centres of the Meuse valley – Dinant, Namur, Huy and Maastricht – enjoy a long and distinguished historiography.[1] The results of recent archaeological research will be added to this historiography in the near future. The excavations in Namur and Maastricht are of special importance due to their scale and distribution.[2] These centres played an important role in the creation of grand narratives on the transformation of the Roman world. They were for instance constantly in the back of the mind of Henri Pirenne, the great Belgian historian.[3] They played a role in the formation of ideas about the decline of the Mediterranean world and the rise of the Carolingian Empire and the shift of the economic centre of gravity from the western Mediterranean to the north. They also played an important role in the development of ideas on long distance trade as the major incentive to economic growth and especially the rise of the towns.[4] Moreover these centres are situated in the heartlands and original home country of the Pippinids and Carolingians.[5] If we are looking for barometers of the transformation of the Roman world, these centres are good candidates for research.

For Henri Pirenne the real emergence of towns was a feature of the eleventh century as a result of a new increase in commercial activities. This occurred after a period of decline in trade from the early eighth century on, culminating in a almost total eclipse of commercial trade in the ninth century.[6] In his opinion the decline of the eighth century was, as we all know, a result of the cutting off of the external markets from the Carolingian Empire as a consequence of the invasion of the Mediterranean by the Arabs. In 1930, however, Felix Rousseau contested this image of Carolingian discontinuity and decline and indicated that the rise of the towns in the Meuse valley in the eleventh century

1 Verhulst 1999.
2 Maastricht: Theuws 2001; Panhuysen/De La Haye/Gauthier, 2002; Theuws 2004; *idem* 2005. Namen: Plumier-Torfs/Plumier 1996; *eadem* 1997; Plumier 1996; Vanmechelen/Mees/Robinet/Plumier 2001.
3 Pirenne 1925 [1980].
4 Rousseau 1930.
5 Werner 1980.
6 Pirenne 1925 [1980].

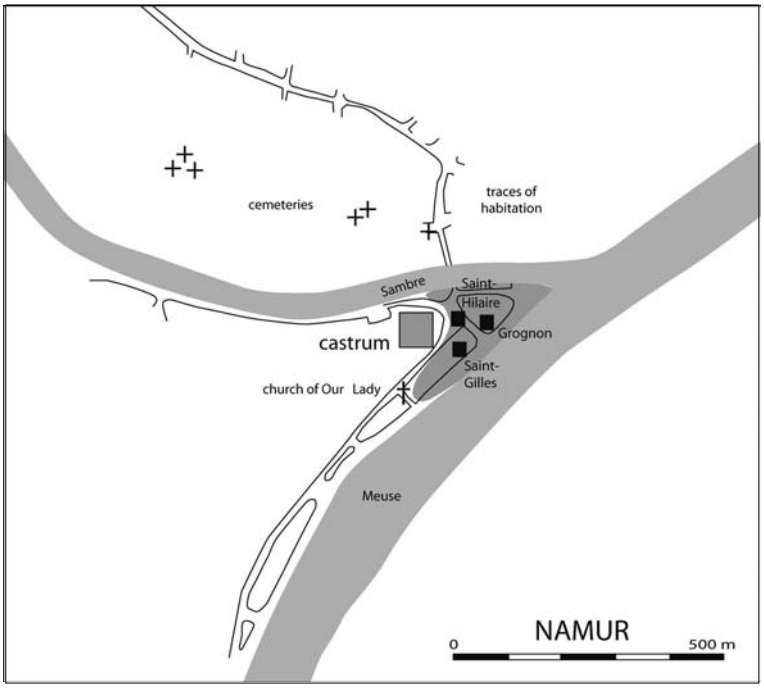

Fig. 1. Plan of early medieval Namur with the Merovingian vicus at the confluence of the Meuse and Sambre and the *castrum* above, as well as major excavation sites

was a logical outcome of a continuous organic development of these since Merovingian times.[7] Although a number of Felix Rousseau's basic ideas has been contested since, the idea of continuity has since never been a matter of debate again. It is taken as a given. The debate concentrated on the structural characteristics of the growth of these centres in Merovingian and Carolingian times. For Felix Rousseau this was clear: They were 'étapes de batellerie', landing stations at regular intervals along the river. In his view the early medieval towns owed their existence to the long distance trade along the river Meuse, part of extensive trade networks from the Mediterranean to the Baltic. In his view this system was mainly run by the well-known Frisian traders. Research by Georges Despy showed that there was no evidence in the written sources to substantiate either the role of the Frisians in the Meuse valley in the seventh to ninth centuries or the existence of long distance trade routes along the Meuse river.[8] He pointed out that the local and regional economy and exchange should be considered as important. Further research by Jean-Pierre Devroey substantiated this model, and he stressed the

7 Rousseau 1930.
8 Despy 1968.

role of the Middle Meuse centres in a limited region, with interregional trade mainly directed to the north rather than to the south across the Ardennes forest.[9] And following an idea by Stephan Lebecq, he argued (I think succesfully) for the existence of two separate trade systems along the rivers Meuse and Rhine, which were mainly or even only connected to each other at places where they meet just before they reached the sea in the middle-Dutch river area.[10] One important connection between the two may however have existed: the old Roman road from Cologne to Northern France. Where it crosses the river Meuse we find the town of Maastricht. But before we go into the archaeology of this place and others let me stress that since Felix Rousseau in the 1930s no one seriously contested the idea that the Meuse towns came into existence as a result of a continuous and, above all, organic development since early Merovingian or even late Roman times.[11] However, as Adriaan Verhulst also pointed out, they were at best local and regional trade centres until they once again became internationally oriented in the tenth century.[12] However, Maastricht may have been an exception to this, having been an international trade centre at all times.

How does such an image of continuity come into existence? Probably because of the connection of individual pieces of evidence scattered through time and space into a single narrative. At first sight such points in time are a perfect illustration of a continuous development of economic and bureaucratic centres. However, a series of major transformations hidden below the surface of scattered historical evidence should be part of this constructed narrative of continuity and economic growth. And that is the moment when archaeology comes in.

Recent excavations in the town of Namur, especially in that part of the town where the early medieval *vicus* is situated, exposed an interesting sequence of layers related to habitation, artisanal and commercial activities and the creation of waterfront constructions.[13] The Merovingian *vicus* occupies the triangular terrain at the confluence of the Rivers Meuse and Sambre (Fig. 1). On the left bank of the Sambre Merovingian burials and some indications of habitation have been found. Several excavations took place at the confluence: one in the court and cellars of the Saint-Gilles hospital, one at the site of the ancient chapel of Saint-Hilaire and one on the site Grognon.[14] The comprehensive report on the excavations is about to appear but the preliminary reports presented by Jean Plumier, Raphael Vanmechelen and others already allow us to establish the long-term history of the site. In Roman times a terrace, which was occupied from the early

9 Devroey 1991.
10 Lebecq 1983.
11 Verhulst 1999, 43.
12 *Ibid.*, 47-51.
13 Vanmechelen/Mees/Robinet/Plumier 2001.
14 Saint-Gilles: several contributions by Plumier-Torfs and Plumier in: Plumier 1996a. Saint-Hilaire: *idem* 1996b; *idem* 1997. Grognon: Vanmechelen/Mees/Robinet/Plumier 2001.

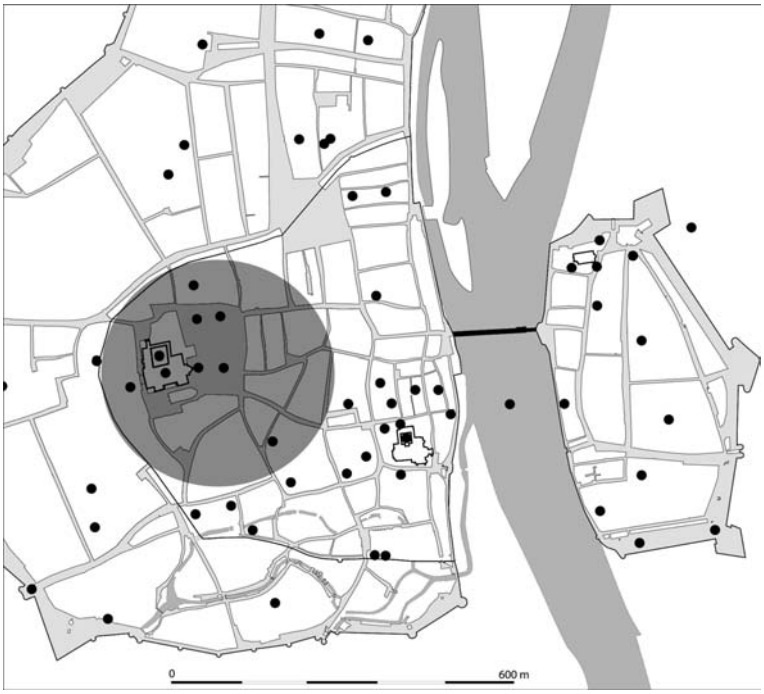

Fig. 2. Excavation locations in the town centre of Maastricht

Roman period into the Middle Ages, was created. This terrace slopes down to the River Meuse. The Grognon excavations showed that already in Roman times, limited efforts were made to improve the waterfront. In the sixth century artisans occupied the terrace. Clear indications of bronze, bone and antler working have been found at several places, suggesting that artisanal production took place in a special artisanal quarter at a scale surpassing local demand. At the same time the waterfront was improved at a much greater scale than in Roman times. Yet these waterfront constructions changed in nature in the seventh century, when the first port-like constructions were made in order to create a landing place for river boats. The excavators suggest that a change in the character of the site from artisanal production to trading is responsible for this. These observations are in accordance with the traditional opinion that Namur is an important regional trading place in the seventh century. It is one of the centres where gold tremisses are minted at that time.[15]

The excavations further show that around 700 a major transformation in the use of the site took place. No artisanal activities have been found from the eighth and early

15 I am not suggesting here that the minting of coins is exclusively related to commercial activities. See Devroey 2003, 158-169; Theuws 2004.

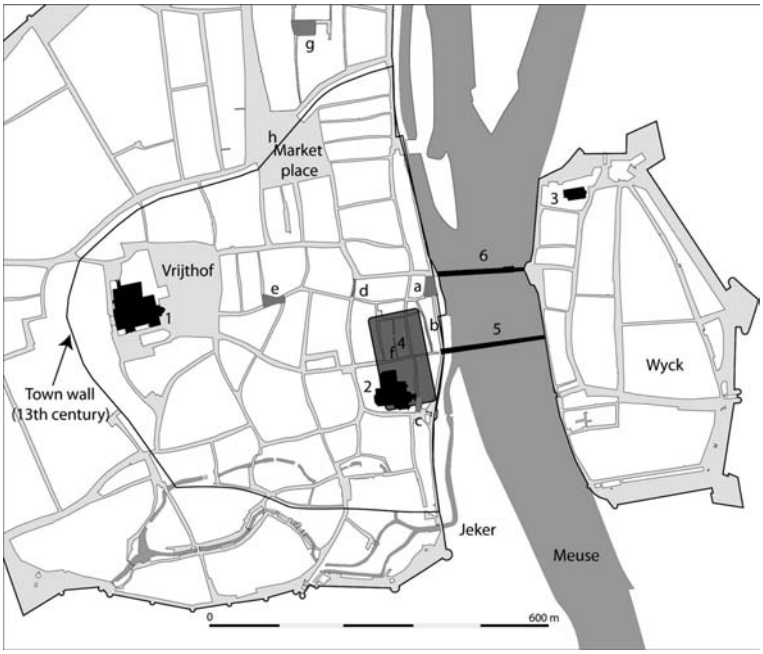

Fig. 3. Plan of Maastricht in 1830 on which the location of the Roman fortress and other later topographical elements are indicated. 1. Saint-Servatius church; 2. church of Our Lady; 3. Saint Martin's church (Merovingian?); 4. Late Roman fortress; 5. Roman bridge; 6. Saint-Servatius bridge (thirteenth century). Market places: a. Vissersmaas; b. Houtmaas; c. Graanmarkt; d. Kersenmarkt; e. Moesmarkt; f. macellum (meat-hall); g. Varkensmarkt; h. Zaterdagmarkt and Houtmarkt

ninth century yet. The waterfront constructions decayed and were not renewed or repaired. No structures indicating habitation have been discovered. Instead a thick black layer, in which a number of human burials are found, was formed. They had various orientations and some graves showed an unfamiliar burial ritual. The irregularity of the burials as well as their location in the mud of a decaying waterfront is not what we expect to find in a thriving Carolingian *vicus*. The triangular area at the confluence of the Meuse and Sambre, however, has not been entirely excavated yet. It is possible that the location of commercial activities was restricted to the (as yet unexcavated) right bank of the River Sambre. This situation existed until the middle of the ninth century, when new waterfront constructions were made, a chapel was built on the terrace, and a parcelling of the terrace and domestic activities seem to have taken place. The chapel blocked the old Roman road that was probably in use in the early Middle Ages as well; this shows that a change in the use of the site had occured since Merovingian times. In the beginning of the tenth century, a completely new waterfront was created.

It appears that two major transformations in the use of the site took place, one around AD 700 and one around AD 850. What happened in between these dates is an

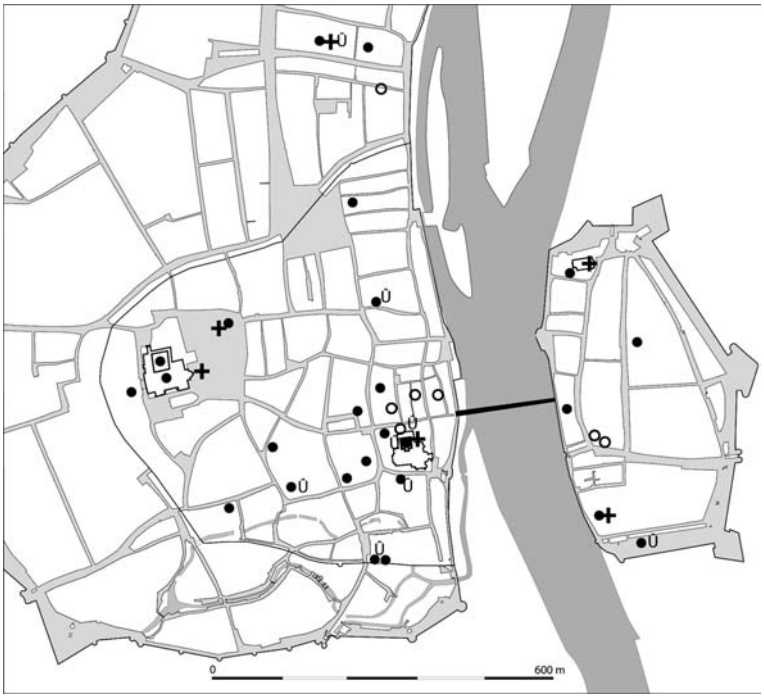

Fig. 4. Maastricht, draft of a map with excavation locations where structural elements (buildings, ditches etc.) (closed dots), finds (open dots), artisanal activities (Û) and burials (+) are found from the Merovingian period (until ca. AD 700)

enigma. There seem to be hardly any indications of artisanal or commercial activities at this site in this period. Were these activities moved to another location – for instance, to the bank of the River Sambre? Did these activities stop altogether at Namur in the Carolingian period? There must have been continuity of habitation to some extent, as the burials and the finds from the black layer indicate this. We have to await the final report to evaluate these finds. One conclusion can already be drawn: There is no such thing as a continuous organic development from the Merovingian *vicus* with its artisanal activities and coin production to the tenth century *portus*. Is this just a local phenomenon in Namur? The evidence from Maastricht points to a more general development.

In Maastricht a large number of excavations has been carried out, but not many of them have been published in great detail (Fig. 2).[16] Nevertheless, a general picture seems to emerge. Part of this picture is a daring hypothesis about the location of a Carolingian fortress.

16 Theuws 2005.

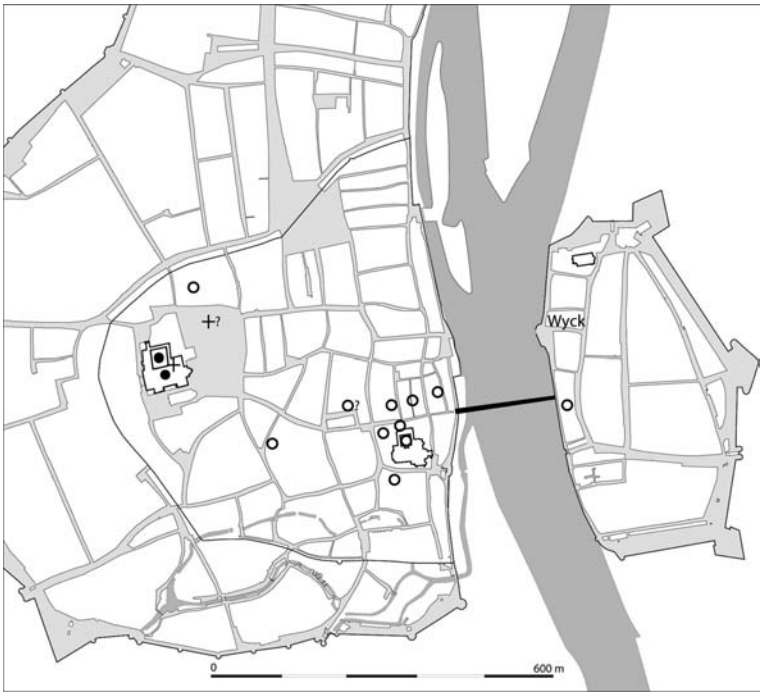

Fig. 5. Maastricht, draft of a map with excavation locations where structural elements (buildings, ditches etc.) (closed dots), finds (open dots), artisanal activities (€) and burials (+) are found from the Carolingian period (until ca. AD 900)

Maastricht is the location where the Romans built a bridge that was kept in use until the thirteenth century. The bridge was, since late Roman times, protected by a small fortress on the left bank of the Meuse (Fig. 3). This fortress and the bridge determine to a large extent Maastricht's early medieval history, together with two major churches: Saint-Servatius on a low hill to the west of the fortress and Our Lady inside of the fortress. Both churches date to the Merovingian period and may have been built in the context of the elevation of Maastricht as a bishop's seat. This was probably in the first half of the sixth century, after a period when no bishops were present in the *civitas* of which the town of Tongres was the capital. Maastricht like Namur developed into a thriving *vicus* in the sixth and seventh centuries. Excavations show that all over the modern town centre there was habitation (Fig. 4). Significant remains of pottery production, bronze working, leather working, glass making, bone working and antler working have been found. Maastricht is also an important minting place; thirteen *monetarii* from the seventh century are known by name.[17] Unfortunately it has up till

17 Pol 1995.

now not been possible to investigate the Merovingian waterfront, and we have to fear that it has for the most part been destroyed.

Maastricht must have been of great importance to the Pippinids and Carolingians.[18] In Carolingian times a splendid new basilica of Saint Servatius was built and the cult centre was transformed into an an abbey.[19] One would expect to find many archaeological indications of a flourishing trading and artisanal settlement at that time, the existence of which is indicated around 830 by Einhard, Charlemagne's biographer and abbot of Saint Servatius.[20] However, no indications of any artisanal activity are found up till now. What remains, as far as we can make a proper judgment on the basis of the present state of knowledge, is a narrow strip of habitation on both sides of the Roman road west of the river Meuse (Fig. 5). The number of sites with remains from the eighth and early ninth century is very small in relation to the Merovingian period. No structural remains of habitation of any significance at the site of the old Merovingian *vicus* have been found. Again, layers of black earth developed in some locations. Their meaning is highly enigmatic. Maastricht, too, went through a major transformation after ca. AD 700. Again we have to ask: Were artisan and commercial activities moved to another place? (For instance, to the other side of the river where today a quarter is situated named Wyck, a name that might have been derived from *vicus*.) Or did these activities stop? This is unlikely in view of the written evidence. In 779 Maastricht was mentioned as one of five important toll stations in the northern Frankish Empire.[21] This information however is not in itself proof of a continuous, organic development. It was concluded that in Namur a settlement phase started around the middle of the ninth century, which may have marked the beginnings of the development of Namur as a town.

In Maastricht it seems clear that a fortress was built that included the abbey of Saint-Servatius. Probably it was a royal fortress.[22] Later in the ninth century, Maastricht was indicated as a *municipium* (a fortified settlement) in the capitularies.[23] This fortress has not been discovered up till now, but I suggest that it is to be found to the west of the location of the old Merovingian *vicus* (Fig. 6). We have to realize that before the fortress was built, the settlement on the west bank of the river seems to have been reduced in size and importance to a considerable degree in Carolingian times.

Now we have arrived at the unexpected conclusion that two major centres in the Middle Meuse valley show serious transformations shortly after AD 700. There seems to be no continuous organic development of these centres from the Merovingian period to the tenth century. Surprisingly, the chronology seems to fit Pirenne's model in some

18 Panhuysen/Leupen 1990. Theuws 2001.
19 Panhuysen 1991; Panhuysen/De La Haye/Gauthier 2002.
20 Einhard, *Translatio*, c. 4,13.
21 Lebecq 1983, I, 116; II, 418-419.
22 Leupen 1996.
23 Van Ommeren 1991, 35 (854), nr 67; 36 (871), nr 71; 41 (908), nr 90.

Fig. 6. Maastricht, possible location of a *castrum* and areas built up in Carolingian times as well as the different possible locations of a royal palace (small polygons) suggested in the literature since the nineteenth century, and the location of a royal estate centre (large polygon)

way better than that of modern historiography.[24] This however does not force us to accept Pirenne's explanation for the decline of the centres (Arab invasions) and the development of an autarkic Carolingian Empire.[25] Historians and archaeologists alike refer to the mushroom towns like Quentowic and Dorestad to illustrate that intensive commercial activities continued uninterrupted in this period. These centres developed at the same time that Maastricht and Namur were transformed and seem to have declined. However, it might be too hasty to draw the conclusion that a new type of trade centres (*emporia*) was simply replacing an older one. Quentowic and Dorestat were totally different centres and their rise cannot be regarded unproblematically as a continuation of the trade that made centres such as Maastricht, Namur and others flourish in the seventh century. Moreover Dorestad and Quentovic cannot be regarded as exemplary of the development of Carolingian exchange in general. They are exceptional features in a liminal position related to cross-cultural trade; different systems of ideas, norms and values were articulated in these centres.[26] They do not seem to have formed part of the

24 It must, however, be stressed that Verhulst classified them as regional centres rather than international trade centres. He also emphasises their continuous development.

25 See also the comments on this complex field of problems by Devroey 2003, 148-175.

26 See for the problems involved in cross-cultural trade in this context: Theuws 2004.

normal system of Christian exchange of the Frankish kingdom, as I recently explained. The intimate relationship between exchange and religion was absent in the *emporia* where no major cult places are found. One point of critique on the image of *emporia* dominating the exhange of the Carolingian age is that the inland exchange centres such as Maastricht have no place in this model. But the critics' image of inland centres that develop continuously and organically also does not seem to hold in a number of important cases. That is why I indicated before the eighth and early ninth centuries as 'an age of experiments': We hardly understand the complexities of the whole sphere of Carolingian production and exchange, in which formal exchange based on emerging market principles coexisted with informal modes of exchange based on social relations, religious belief and cultural attitudes. The intimate relation between religion, exchange and production that existed in Merovingian times may have been given form in a different way in Carolingian times – for instance, by moving production to monastic sites.[27] But were commercial activities also moved there? Stephane Lebecq indicates that they did, especially to the large monasteries outside major centres such as Paris and Trier.[28] We have to make a clear distinction between what happened to exchange activities as well as artisanal and agrarian production.

And finally we have to realize that centres such as Namur and Maastricht lay in the heartlands of Carolingian power and that they were transformed at exactly the same time the Pippinids and Carolingians gained control of the kingdom. At the same time a process of ruralisation of the elite took place. But this ruralisation does not automatically imply autarky, as Henri Pirenne suggested, although in general the material culture of rural settlements in the southern Netherlands (to some extent the hinterland of Maastricht) was relatively poor in comparison to that of the Merovingian period.[29] Farmyards were less complex, indicating a changed (and reduced level of) household production as well. Could it be that centres such as Maastricht and Namur not only were transformed as a result of economic and social changes, but also because of important changes in aristocratic mentalities related to this ruralisation, to the extent that they had no need for the old centres?

There is still a long road ahead before we really understand the articulation of Carolingian social, economic and religious transformations.

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27 Hodges 2000; Lebecq 2000.

28 *Ibid.*, 148. One wonders what happened to these central places themselves in Carolingian times.

29 This information is based on my own observations. Unfortunately not many of the excavated settlements have been published in sufficient detail to deal with this problem extensively. Imported ceramics from the Rhineland do, however, turn up at almost every site. But most of the time that is all.

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Towns and rivers, river towns: environmental archaeology and the archaeological evaluation of urban activities and trade*

Joëlle Burnouf

Twenty years of environmental archaeology in France. The relationship between towns and rivers: a case study of the Rhône and the Loire

Urban archaeology really started in France in the 1970s and experienced tremendous development during the 1980s, because of the expansion in rescue archaeology in ancient urban centers, particularly Lyons.[1] The question archaeologists sought to answer was the "making of the town": how did urbanization arise, which social groups, what powers had constructed this "object" which written sources did not even call a "town" until the middle of the thirteenth century.

From the mid-1980s, archaeologists specializing in the historical periods started to work in an interdisciplinary way with environmental scientists, highlighting the complex relationship between communities and the environment in which they have lived for the last 3000 years.[2] They also benefited and drew inspiration from the research and analytical contributions of geographers,[3] sociologists and anthropologists.[4]

Today the "urban fact" is regarded as a social construct inherited from a number of factors. The unintentional and unexpected result which is the making of a town is the product of a coevolutionary interaction of nature and culture. It is a "an unreflected space"[5], a socio-spatial construct.

Before the great expansion of urban archaeology, archaeologists as well as historians relied on the theories of the Belgian historian Henri Pirenne. At the beginning of the twentieth century, he linked the emergence of cities and their expansion to the international trade which started in the eleventh century. It was assumed that Roman cities had disappeared under the assault of the barbarian invasions, that the early Middle

1 CNRA 1989, 1995, 2002.
2 Burnouf/Muxart/Villalba/Vivien 2003; Burnouf/Leveau 2004.
3 Lussault 1996; Levy 1999; Levy/Lussault 2003.
4 Hall 1971, 1984; Elias 1974, 1997.
5 Lussault 1996.

Ages was unfamiliar with "towns," and that those which existed, had shrunk to a much reduced area and were not even recognized as such. In the written sources even the term was lacking.[6]

Archaeological evidence shows that the ones Pirenne identified were not the only factors in the emergence of the "urban fact". It is now established that medieval societies invented "towns" during the medieval millennium, and that their activities led to irreversible transformations of the environment. The process of urbanization underwent several phases, including one during the early Middle Ages (fifth-tenth centuries). This was the in period in which the "new cities" appeared, a concept which was borrowed from geographers and town planners of the 1960s. These new cities were river towns, and they all share some common features. Geographically they are located in an area which covers northwestern Europe; topographically they took shape on the banks or in the estuaries of the great European rivers.[7]

These features led some historians and archaeologists to recognize in them the influence and the contribution of the Scandinavians or the Frisians.[8] It is true that these societies of sailor-merchants experienced a great expansion in the same period and in the same area; deep down, this is pretty close to Pirenne's theory, albeit with an ethnic twist. Historians and archaeologists also relied on the theories of town planners and urban architects who believed that the urban can only arise from planning by one or more authorities. Grounded in studies of urban morphology, this theory recognized the existence of urban structures in the ancient world but then passed obliviously over a thousand years of urban history to discover the "reappearance" of the urban fact only in the early modern period. The Middle Ages did not come up to this standard.

Early medieval urban establishments share a certain number of common characteristics which have emerged from archaeological explorations and which, rather like mathematical estimators, constitute indicators of the urban fact.

1. The urban fact of archaeologists and of environmental archaeology

1.1. Archaeological indicators or criteria

Archaeologists are a kind of "sedimentary historian," who work on material but mute sources. In order to understand the process of town formation, they have defined a number of parameters which enable them to characterize what constitutes an "urban fact" in the early Middle Ages. The first criterion is spatial: the surface area occupied during

6 Burnouf 2003.
7 Lebecq 1983.
8 Conference of Douai 1994; Conference of Caen 1991 (1987); Lebecq 1983.

the first half of the medieval millennium must be defined and compared to the urban surface areas of the periods which immediately preceded and followed. The second criterion is the presence of that special sort of sediment called "black earth". Admittedly this descriptive term can cover quite different realities. Black earth is nevertheless present on all town sites of the early Middle Ages. The depth and physical and chemical features of the sediment vary, but the occurrence of the black earth itself remains a constant. This fine, dark-colored layering within which the stratification is as hard to read as it is to interpret, nevertheless represents some six hundred years of archaeological archive of the history of early medieval towns. It must be studied not only as a highly specific material vestige across its entire sedimentary depth, but also spatially: where and over how much surface do these black earths occur?[9] Beyond particular taphonomic conditions, analysis of this composite material shows high frequencies of organic materials, of hydromorphy (the chemical transformation of materials through the seepage of water), and consequently particular treatment of materials used by these societies as well as their management of trash within a circumscribed space. The third criterion for studying the urban fact is that of the boundaries of occupied spaces reflecting the activities of the social groups which produced the urban fact, and the density of occupation per spatial unit.[10] The fourth criterion is the characterization of the structure and the morphology of the basic unit of spatial organization, whether it be a plot or a house. The fifth criterion observes the traffic network, its structure, organization and density, compared to the occupied space. The entire set of these criteria which constitute so many indicators must then be ranked in terms of the reliability of the data, and treated statistically. The same should apply to the archaeological finds, whether they represent artifacts or ecofacts. What really changed the interpretation of the data was correlating the archaeological data in the narrow sense with the environmental data. In the case of the formation of towns, the most important of the latter turned out to be the environmental features of valleys, and the proximity of rivers.

1.2. New approaches: Environmental archaeology and understanding the state of the ecological milieu

Questions which can be applied to the study of the connections between urban societies and water systems include: What type of correlation exists between an urban system and a river system? What was the state of the river system before the urban development of the early Middle Ages, and what did the broader space, and the landscape look like? In terms of the early Middle Ages, we need to know the state of the river system

9 See the contribution of R. Macphail in this volume.
10 Conference of Douai 1994.

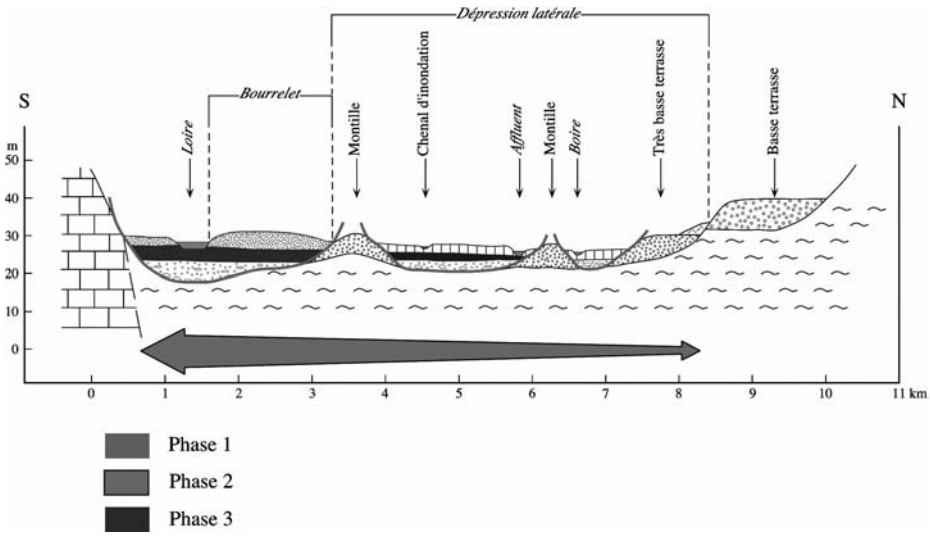

Fig. 1. Geomorphological cross section of the Loire valley

around the first century of our era. Next we need to investigate the interaction between communities and rivers over the last 2,000 years: how, for instance, rivers reacted to human intervention (e.g. hydraulic modifications, embankments, construction in the river bed, etc.) and how feedback effects and river dynamics affected the settlements.

The example of the studies conducted in the Loire valley will illustrate how environmental archaeology changed the interpretation of the available data, and the study of the process of urbanization. To answer these questions it is necessary not only to understand the functioning of fluvial systems but also the past rhythms of their normal and exceptional dynamics. This requires an interdisciplinary dialogue between archaeology and the natural sciences.

The formation of alluvial plains is a old process which followed the last glaciation, starting with the most recent glacial retreat. But on a human time scale, at the micro-local level, the basic land forms stem from the early Holocene (between 15,000 and 5,000 BP): an ancient network of interwoven courses, former channels or river beds, or river bank buffer swells (Fig. 1). They include irregularities which could be reactivated in unusual periods of more or less extreme conditions and, on a broader scale, in periods of deteriorating hydraulic conditions. We know, for instance, that old river channels which, according to radiocarbon dating, were blocked by about 3,500 BP, remained wetlands and came back to life when the river flooded.[11] They therefore continued to

11 Dubant 1993; Vivent 1998.

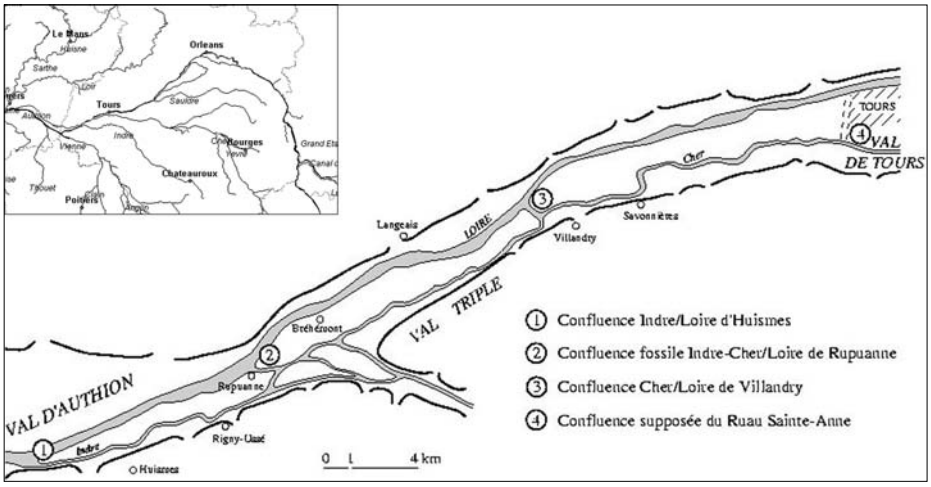

Fig. 2. Map of the triple valley of the Cher, Indre and Loire rivers, showing fluvial morphology, confluences and "turcies" (levees)

represent serious obstacles for early medieval societies. Moreover, as the examples of Lyons and Tours show, interfluves, that is, areas lying between rivers, and the areas at river confluences, offered particularly unstable spaces whose complex history is a stratigraphical tangle.

Rescue archaeological projects undertaken at Lyons since 1984 illustrate nicely how environmental archaeology has completely altered our understanding of an agglomeration's historical development. Before the mid-1980s, investigations focused on the urban features of the city, whose essence, it was maintained, was inherited from classical *Lugdunum*, at the confluence of the Rhône and the Saône. The first breakthrough was the demonstration of fluctuation in the area of the confluence itself, and the persistence until the central Middle Ages of branches of the Rhône in the modern "peninsula," Presqu'île, the confluence zone.[12] Two important conclusions followed from these observations. Until the second Iron age, this area was not suitable for human occupation because of the river's hydraulic regime and the high risk character of the location. Rather, contemporary human occupation should be sought upstream from this zone, on the right bank of the Saône in the "plain" of Vaise, paired with two sites on high ground, on the hills of Fourvière and of Croix Rousse.[13] Starting with the classical period, urban infrastructure projects changed the occupation conditions in the valley and in the interfluve, in connection with a climatic optimum which lasted until the end

12 Bravard/Prestreau 1997.
13 Bravard 2003, 27-35.

of the first century of the common era. Thereafter, settled areas can be documented archaeologically on both the right and left banks of the Saône, close to the confluence, which then lay further to the north and to the west, within the flood plain. Sites with the potential for urban development only began to be exploited on the Saône's right bank from the fourth century,[14] with the appearance of the cathedral district, that of the canons,[15] as well as the ports.[16] Taken all together, the publication of these findings[17] established a point of departure and of comparison for investigating the Loire valley beginning in 1995, and for reconceptualizing the problems of environmental archaeology.

2. Cities and wetlands before the tenth century: urban development occurred in interaction with the river and opportunistic water management

2.1. Legacies

A first, essential idea is that any given society must deal with systems that it inherits in a certain state. In the middle Loire region, between Nevers and Angers, the Loire's floodplain spreads out into "valleys," formations that were defined by Roger Dion.[18] As wetlands rich in biodiversity, these areas offer a certain number of potential advantages for human societies. In the valley of Tours, rescue archaeology has just begun to document the situation inherited from recent protohistorical times, and human society has left clear tracks in this wetland zone which was crossed by the ancient courses of the Loire and the Cher.[19] This space is a broad interfluve and, in that period, the Cher had four different confluences with the Loire: from east to west, they were the brook of Saint Anne, the spit of the Cher, the Rupuanne, and the Avoine (Fig. 2). The ancient town, built at the beginning of the first millennium of our era, occupied about 70 hectares on the left bank of the river. Communities settled on the swell at the river's edge, in direct contact with the water, as well as on the old river channels which had filled in since the Neolithic era. The old river channels were always low-lying and could flood in periods of high water; such a site is known as a "boire". Ancient societies capitalized on the hydromorphism of these areas. The present state of archaeological research locates classical settlement to the east of the recent protohistorical occupation; it does not exactly overlap with the latter, although new discoveries could show otherwise. In

14 *Idem* 1997.
15 Arlaud/Burnouf 1994.
16 Ayala 2004.
17 Arlaud/Burnouf 1994; Arlaud/Bravard/Franc/Verot-Bourrely 1997; Burnouf 1990.
18 Dion 1934.
19 De Filippo 2004.

other words, even though one can observe permanent occupation on the left bank of the Loire, on the microlevel there was a certain discontinuity in the exact location of that occupation.

This explains why, until now, archaeologists had believed that the site was not settled prior to the classical town. This interpretation was grounded in two erroneous assumptions: on one hand, wetlands were assumed to be unsuited for human habitation, an idea that gained currency in the eighteenth and especially in the nineteenth centuries thanks to the school of the "hygienists," and which was still current in the late twentieth century. On the other hand, *oppida* sites, which are located on heights, were over-interpreted. They were assumed to be the norm for inhabited places, because "open" agglomerations of the same period had not yet been discovered in the valleys. In other words, a provisional state of knowledge was mistaken for a real state of the past.

At the end of antiquity, Tours' occupied space seems smaller. The archaeologists reckon it at about nine hectares and, from the fifth to the twelfth centuries, occupation polarized around two centers on the left bank: to the east, the elite ecclesiastical and lay district centered on the cathedral and, to the west, the district around the abbey of St Martin.[20] The early medieval inhabitants recycled, in part, ancient urban structures even as they adopted a different spatial distribution and urban focuses. In fact recent discoveries[21] show how those focuses had changed even before that, for instance, by the slight (on a macro-scale) shift of the ancient settlement to the east, compared to the open, protohistorical agglomeration. For the ancient city itself, the discovery of an impressive bath complex, built on a "boire" or old river channel susceptible to flooding, revised our understanding of the classical town's central focus, by shifting to the southeast where we now recognize the "center" of the ancient agglomeration. Out of this inheritance, early medieval communities constructed a different use of the interfluve and the wetlands.

2.2. The river as a polarizing force: the attractive power of various forms of riverine space

Starting with what was already in place, that is the inherited state of the river and related structures, as well as with the ancient urban fact, human groups kept on exploiting the swell at the river's edge as well as the accumulated rise created artificially by the ancient occupants (5 m in the eastern area, and 6 m in the west).[22]

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20 Galinié 1986.

21 Fouillet 2004a; *idem* 2004b; De Filippo 2004.

22 Blin/Burnouf/Carcaud/Garcin/Giot/Galinié/Marlet/Rodier/Taberly 2003; Burnouf/Carcaud/Garcin/Musch/Visset 2003.

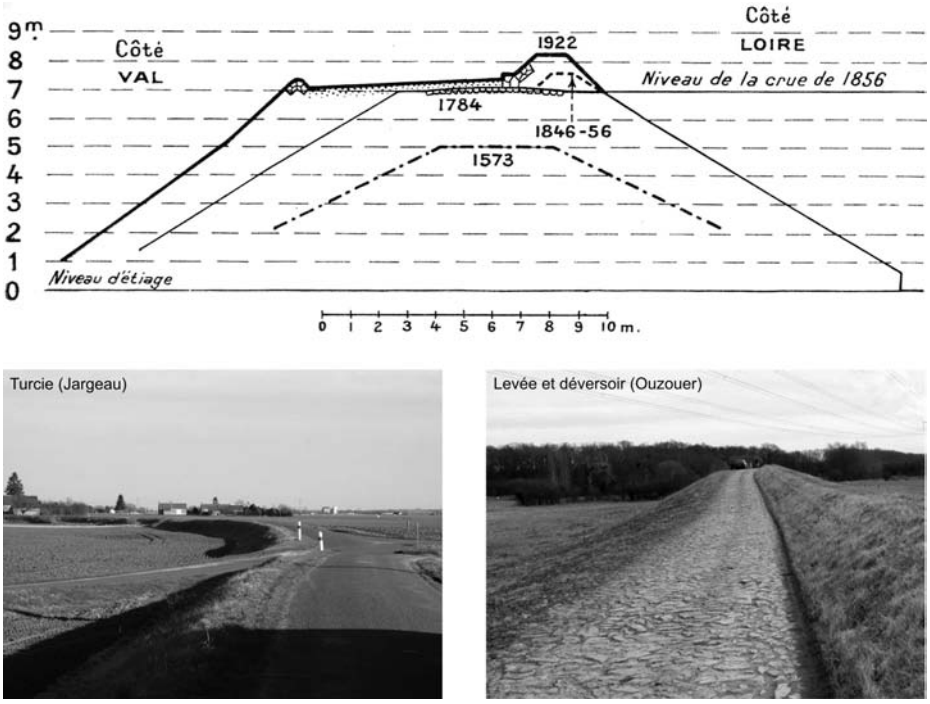

Fig. 3. Cross section of a "turcie" and a "levée" in Roger Dion 1934 and photographs of a turcie at Jargeau and of a levée at Ouzouer

However, as the excavations show, they also gained ground on the left bank of the Loire over the next 500 years, particularly between the abbey of St Martin and the Loire. They also occupied certain parts of the wetlands south of the abbey, even including "boires" that crossed between the palaeochannels, the former courses of the Loire and the modern river.[23] The different elements which make up the interfluve, that is, the Loire itself, its affluent the Cher, and the palaeochannels which had become "boires" were integrated into social experience as spatial and topographical points of reference. They show up in the written sources as early as the tenth century, and occur as legal and political boundaries in the eleventh.[24] In addition, people took over the banks and the shores, as well as the islands within the river bed.[25]

Their concern, insofar as we can interpret it, was thus to adapt to the microtopography of the river courses, and to the forms of the river bed, even as they sought to control the changing water levels of the two hydrosystems and exploit the biodiversity of their ecologies.

23 Noizet 2003.
24 *Ibid.,* chapter 8, 10; *idem* 2005.
25 Noizet 2003, chapter 14, pp. 360-363.

Although the same principles obtain in the case of the interfluve of the Loire and Cher as in the studies conducted in the Rhône valley, the topography and the operation of the hydrosystems differ. This helps us to see how human populations solved their problems in different ways. At the macrolevel, the ancient agglomeration of Tours is situated on the Loire's left bank, on the swell at the edge of the river and in direct contact with it, in a floodplain irrigated by the flood channels of the two rivers. The city was built in the northern part of the interfluve, in the Loire's floodplain, opposite two important depressions on the right bank: the valley of the Cisse to the east, and the valley of the Choisille to the west. These two depressions connect the right bank of the Loire valley with the region of Blois to the east, and the valley of the Loir to the west. This situation affords an opportunistic exploitation of lateral communications with the northern plateau via these two valleys, and resulted in the development of communications axes – bridges – as well as other activities – mills – directly connected to the town. Upstream of the agglomerations, on the right bank, in addition to the abbey of Marmoutier, two other nuclei related to river traffic developed near the confluence of the Loire and the Cisse. In this case, people also made good use of the river's energy for navigation as well as its changing river levels and currents: the siting of the city's ports owed nothing to chance, and everything to the Loire's currents and hydraulic regime. Certain social groups, heirs of earlier economic, administrative and legal structures, required for their activities a certain number of goods of local, regional or more distant origin. In broad terms, whether they simply managed or acquired them, these goods were transported by river to centers of consumption and distribution.[26] In order to optimize the offloading of cargo, the ports on both sides of the river were located at the points at which the current flowed into the shore. This insured that even in low water periods the river remained deep enough for boats to dock there, precisely where the social players of the early medieval city took ownership for their ports. This port activity gave rise to two boroughs.[27] The location of occupation at the river's edge thus shows a relation of close interaction with the river. Sometimes human activity can be detected archaeologically in perennial fashion: bridges were built, places of power which can still be seen were raised, the banks were built up. On the other hand, the state of the environment, the exact line of the banks, the patterns of water movement are all more difficult to "read" on a macro-scale, and to interpret from the deposits.

This suggests that how an environment works and its state at a given point in time create or impede possible uses of that environment by societies in spaces which may be termed "potentially suited to urban development." One observes therefore that on a time scale which is short for the workings of the river, but long for those of human societies, the exploitation of the river, its banks, the main river bed and the floodplain were so

26 Noizet 2001.

27 Carcaud/Garcin/Noizet 2004.

many "spatial potentials" implemented by those societies. That was certainly the case between the fifth and the eleventh centuries. The attractive power of this particular space encouraged human groups to take control of it even without a clearly defined prior intention, a program, without the directive intervention of some "power." So far as we can judge from, or at least interpret, the archaeological and written evidence, it would seem rather that such powers profited from the new conditions created by social groups, in order to benefit from a development which they did not start.
This is what happened with the development and improvement of the river in the early Middle Ages. The state of affairs observed in the tenth century is therefore quite different, and one can interpret it as a new spatial organization. This interpretation inventories a situation which one can consider as the unpredictable outcome of the choices made by human groups in the various earlier periods, that is, during the early Middle Ages.
If we were to shift our vantage point from the scale of the Tours interfluve to that of the middle Loire valley, we could observe a series of comparable phenomena: uninterrupted occupation without continuity, unpredictable outcomes in the absence of an initial urban project, direct contact with the river against a backdrop of the exploitation of the microtopography of "boires" and wetlands. The archaeological data allows us to make the same three observations about different agglomerations in the middle Loire: Orleans, Meung-sur-Loire, Beaugency, Blois, Amboise, Candes-Saint-Martin, etc.

These developments put in place by human societies across the five hundred years from the fifth to the tenth centuries were joined at the end of the early Middle Ages by an innovation: the construction in the river bed of levees, which introduced powerful constraints into the hydrosystem. It happens that that five-hundred year period witnessed at least two hydrological deteriorations which are documented across the whole of northwestern Europe: one in the sixth century, and another at the beginning of the ninth century.[28]

What archaeologists observe is the manner in which communities occupied and transformed the banks of rivers during the first medieval half-millennium, and how they created not only their lodgings but also the structures necessary for their activities. They observe how people exploited the hydraulic energy produced by the river. But they also detect how people developed the botanical and animal resources of the river environment by installing "in" the river bed the structures required by these activities. Communities took control not just of the banks, but of the river itself. Once these different activities coalesced, they produced new spaces, new "places" of population density which were mutually dependent and which relied on the river. In so doing, these groups also created new constraints, not only for themselves, but also for the hydrosystem with which they constantly interacted. These constraints took shape as the development of new "molds" which patterned space: constructions for crossing, for

28 Burnouf 2002.

Figs 4 and 5. Excavation on the site of a car park on the left bank of the Loire, in downtown Tours (Place Anatole France). Cross section of the "turcie" of the left bank

fishing or navigating, for directly exploiting the latent energy of the river, and especially, construction to protect some of the spaces: the levees. In the light of the evidence, it seems to me that the social groups which occupied these spaces, spurred precisely by the growth of the coalescing population, developed new agricultural activities on the interfluvial soils. Such activities ran counter to the river's hydrological workings in the form of floods. In order to protect these new activities from the river's risks, from an uncertain date social groups began to construct the levees which are first mentioned in 821 (as Latin *aggeres*), and from the tenth century were called "turcies" (Figs 3-5). This "fettering" of the river isolated four different spaces, three of which came to be called "islands": the agglomeration of Tours, the island of Berthenay, and the island of Rupuanne. By cutting these territories off from the two rivers, these new enterprises

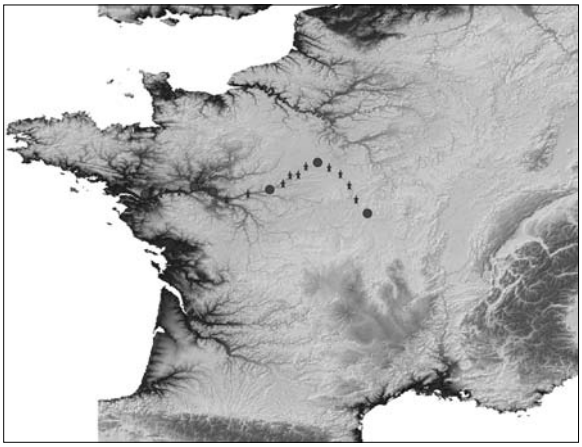

Fig. 6. The middle Loire: an "urban ribbon: the state of the agglomerations in the Early Middle Ages

impacted the spatial whole at the local scale, insofar as they deprived the rivers of their floodplains and increased the pressure of floods on these spaces during periods of high water at the regional scale.

So social groups "use" a certain state of an environment which also happens to come to them from the past but does so at another scale of time and space from the social. It is the interaction of these two different scales of the two different systems, the social and the river systems, which leads to a new state of the systems.[29]

Scholars have observed a result, a state of affairs in the eleventh century which resulted from a long process. All along the river's floodplain, between Nevers and Nantes, the written as well as the archaeological evidence attests to the existence of 29 larger or smaller agglomerations, situated around every 24 km. This state of affairs, which still obtains today, is a legacy of the process of the construction of the urban fact between the fifth and tenth centuries (Fig. 6).

The early Middle Ages: a profound cultural change in the relationship between social groups and the environment in the valleys

Indisputably, the half-millennium of the early Middle Ages marks a turning point in the way social groups related to the valley environment. While archaeology in the more conventional sense allows us only to observe and interpret certain results, environmental archaeology permits us to ask our questions in a different way, and so to interpret anew the archaeological traces of the initiatives of social groups. The urban network observable in the eleventh century is a state of affairs inherited from 500 years worth of social systems. This network made the Loire's floodplain into an "urban ribbon" which

29 Burnouf 2005.

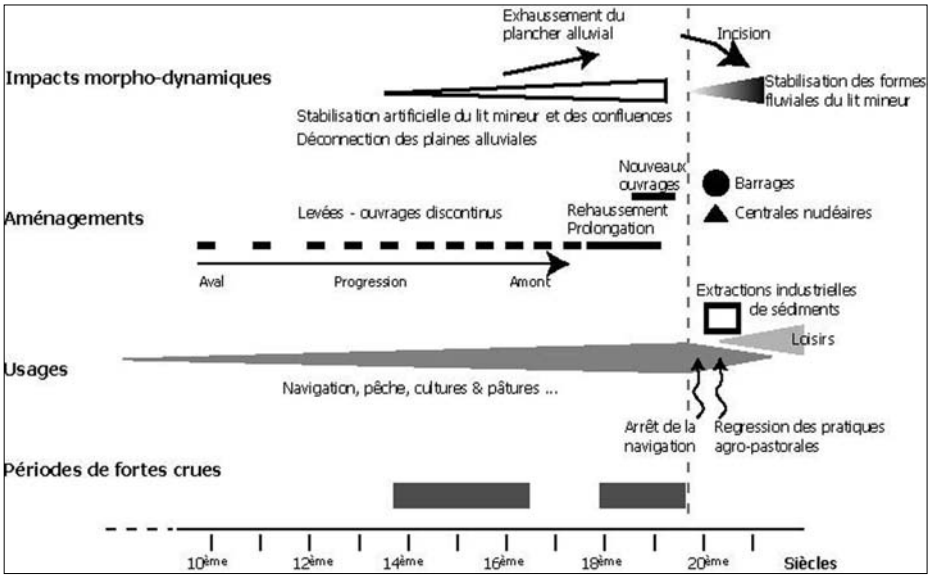

Fig. 7. Social and natural legacies and their long-term consequences

remains active to this day, and it was laid down by the societies of the early Middle Ages. It represents a profound cultural transformation in the relations early medieval societies developed with moving water and its hydraulic power. It also represents the desire of the social groups operating in this space for permanent interaction with the rivers. The material outcome is the urban fact: these are truly river towns, and the urban fact attests to that profound cultural transformation.

In order to meet needs that arose from their food supply as well as their other activities, the very same social groups who were creating the urban fact undertook projects whose result was to constrict the workings of the river and its "breathing space", particularly in high risk periods, in floods. As we know, the sixth and the early ninth centuries were two moments of deteriorating water and climatic conditions. Perhaps in that connection, those social groups launched even more constrictive projects by beginning to build levees. That undertaking, which would continue until the nineteenth century, triggered chain reactions both in the environment and for societies (Fig. 7). It started a process which creates risk for successor societies, and demarcates an irreversible turning point in the diverse situations of the floodplain of the middle Loire.

(translation: Michael McCormick)

*The research in the Loire valley started in 1995 and was financed by the CNRS (PEVS-ESDLT and PEVS-SEAH then PEVS-SEDD) from 1997 to 2001 and by CNRS (PEVS-ZA) in 2001 and 2002. The ZAL (Zone Loire Workshop) has been a program of the fifth division of the INSU "Societies-Environment" since 2003. For providing the illustrations, the author thanks: Nathalie Carcaud, MCU-HDR, University of Angers; Manual Garcin, Researcher, BRGM; Raphaël De Filippo, AST, Researcher INRAP; Nicolas Fouillet, Researcher INRAP.

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The royal foundation of *Recópolis* and the urban renewal in Iberia during the second half of the sixth century

Lauro Olmo Enciso

In 578, King Leovigild had only just achieved a territorial cohesion of the Visigothic Kingdom, through a series of victorious campaigns against the Byzantine Empire, against several indigenous towns of the peninsula, the aristocracy and against the peasantry. As a consequence of this success, Leovigild – taking the Byzantine Empire as a reference – created a centralised state, of which Toledo became the capital. Similarly, for the first time in the Visigothic Kingdom, he adopted royal gear and attributes, coining his own currency and, in order to support all this, imposing a system of tax collection.[1]

The foundation of *Recópolis* in 578 constitutes a clear example of the power of the state in the moment of the foundation of the Visigothic Kingdom. The scantiness of the written sources for the Visigothic period contrasts with the importance that they give to the foundation of the city, as well as the references in the documentation of the Islamic and Christian periods.[2]

Essential hereby is the piece of news that John of Biclaro transmitted in his *Chronicon*, regarding the events that took place in 578:

> "*Livigildus rex extinctis undique tyrannis, et pervasoribus Hispaniae superatis sortitus requiem propiam cum plebe resedit civitatem in Celtiberia ex nomine filii condidit, quae Recópolis nuncupatur: quam miro opere et in moenibus et suburbanis adornans privilegia populo novae Urbis instituit*".[3]

Further along, Isidore of Seville reported of the chronicle of the event in his *Historia Gothorum* which says: "*Condidit etiam civitatem in Celtiberia, quam ex nomine filii sui Recopolim nominavit*".[4]

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1 Olmo Enciso 2001b, 380-382.
2 *Idem* 1995, 212.
3 John of Biclaro, 88.
4 Isidorus of Seville, 51, 10.

Fig. 1. Aerial view of *Récopolis*

Recópolis in the Visigothic age: the archaeological investigation

The first archaeological excavations were made in *Recópolis* between 1945 and 1946, where the church and a large-dimensioned building were discovered (Fig. 1). They already dated from that time and were interpreted as belonging to a palatine complex.[5] The excavations did not restart until the end of the 70s of the past century and, with intervals and due to modest means, the excavations followed one another in the course of the 80s and the beginning of the 90s. Finally, in 1996, the current investigation was started (Fig. 2).

As an urban centre, *Recópolis* had a dynamic life, in the Visigothic period (from the end of the sixth century until the beginning of the eighth century), developing with two documented phases[6] and in the early Islamic period (from the beginning of the eighth century to the first half of the ninth century) with three phases.[7]

5 Cabré 1946, 45-48; Olmo Enciso 2004, 377.
6 Olmo Enciso/Castro Priego/Sánchez Gónzalez/Sanz Paratcha 2002, 545-555.
7 Olmo Enciso 2002, 470-479.

Fig. 2. The excavation from 1996

The two phases of the Visigothic period show an urban environment, which is neither static nor homogeneous and, therefore, exposed to transformational tendencies. Moreover, as I have already defended in other works, these are connected with the process of changes taking place within the social structure of the period.[8]

First Phase (from the end of the sixth century to the first half of the eighth century)

Recópolis, extending over an area of 33 ha, is placed upon a hill, one of its parts surrounded by the Tajo River. The topography of this landscape facilitated the realisation of an urban plan which was organised in different terraces. The archaeological excavations made in the last years show – for the first of these phases: the foundational phase – the existence of an urban plan defined by a regular layout and the hierarchisation of the urban space (Fig. 3).

A group of palatine buildings was located in the upper area of the city. This group consisted of a series of buildings placed round a big square (Fig. 4.A1, A2, A3). The main constructions had two floors, with the upper floor being the main one, as can be

8 *Idem* 2001a, 386, 390, 392.

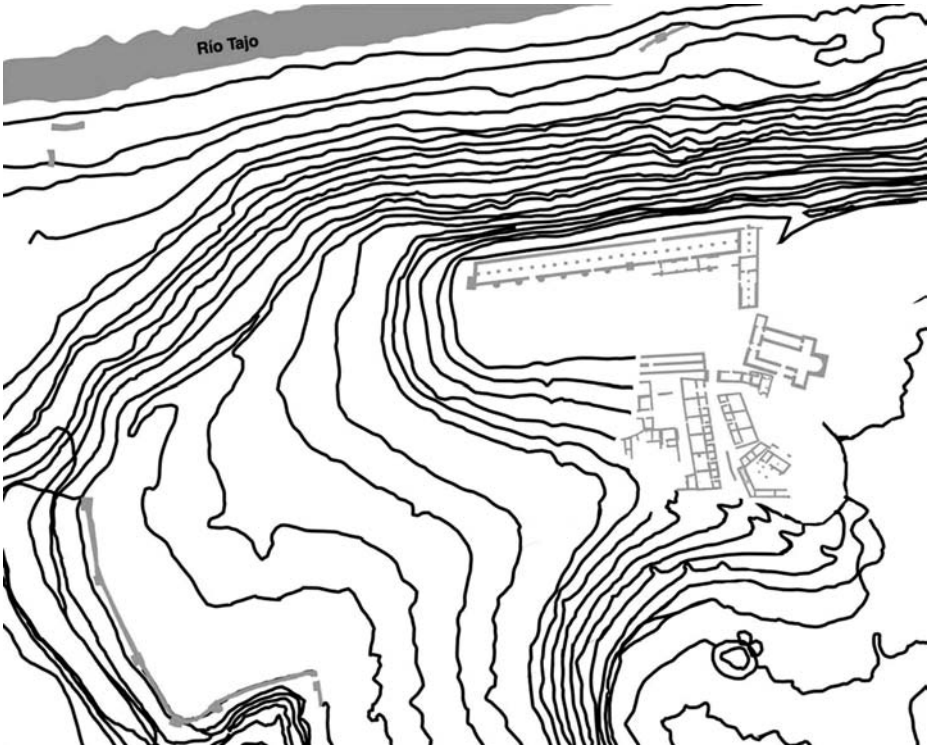

Fig. 3. Plan of *Récopolis*

seen in its pavements made in *opus signimum* and with which an extent of ornamental remainders are associated .

In the east side of this complex, we can find the church excavated in the 40s of the last century (Fig. 4.B). It is a building with a cruciform floor inscribed in a rectangle, constituted by a central nave and a transversal one, by way of transept with a semicircular apse to the inside and a rectangular one to the outside. The central nave is framed by two collateral naves which communicate directly with the transept and another one placed by way of narthex, where the main entrance is located. There is a rectangular room that has been interpreted as a baptistery, in the foundations of which the coin hoard of *tremisses* was found.[9] This church must have possessed a significant amount of decoration as can be told by the large amount of sculptural fragments. A gate (Fig. 4.C) functioned as the entrance to this palatine group and it also indicated the connection point with the main street of the city, which began here.

The whole city was surrounded by a wall, flanked by square towers in which the entrance gates opened towards the city (Figs 3 and 5). The wall measures 2 m in width

9 Cabré 1946; Olmo Enciso 1998, 213-215.

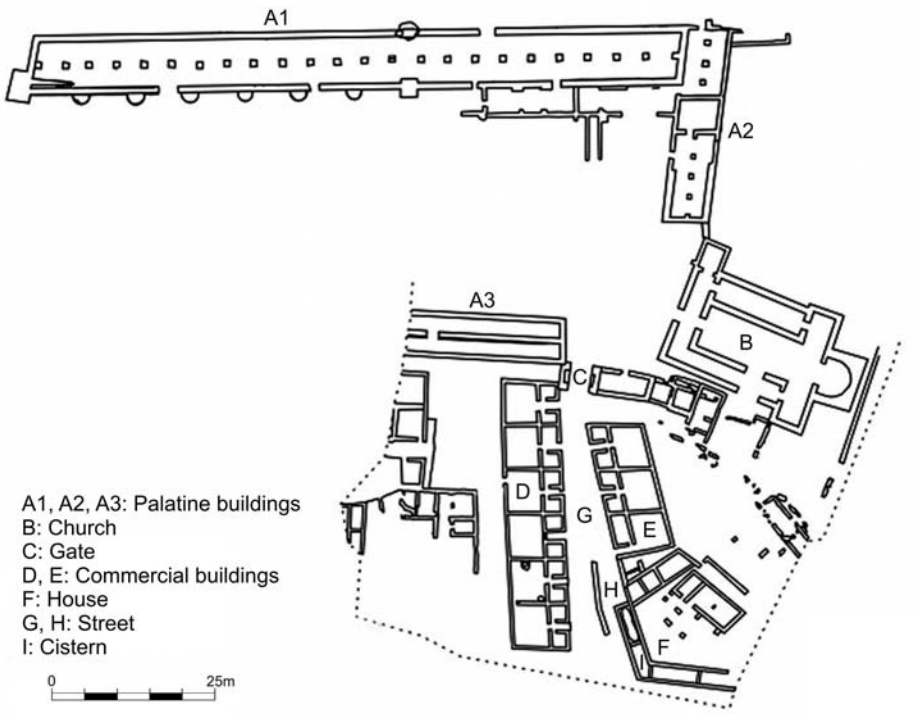

Fig. 4. The excavated buildings

and was built with two faces, both made by ashlars and an internal stone filling joined through mortar. The towers, built in the same technique, measure 6 m a side, with an external and internal projection. At present, the highest remaining height is 5 m. The only excavated gate is the square entrance, flanked by two towers. The wall was plastered completely with white lime mortar.

Similarly, remains of the aqueduct of the city have been discovered outside the urban area, as well as the quarries where the stone for the construction was extracted. *Recópolis* possessed a mint where at least four Visigothic kings coined currency: Leovigild, Reccared I, Suintila and Witiza.

The recent archaeological excavations

The archaeological investigations carried out during the past few years have discovered a series of spaces and buildings on a new ground plan, of which only the foundations remain (Fig. 4.D, E). However, they are very affected by the reuses and the functional changes taking place in the course of the seventh, eighth and ninth centuries, as well as

Fig. 5. The city wall with its square towers

by the later agricultural uses of the soil until the twentieth century. These new spaces and buildings, planned and built in pieces of land where no kind of activities existed before, date from the end of the sixth century AD, the moment of the foundation of *Recópolis ex novo*. Therefore, they are a part of the urban planning characterising the first phase of the city.

The main street was the backbone of this part of the city. It originates from the gate of the palatine complex in the north and leads to the south. Its pavement was made of clay mixed with lime. At the eastern side, there was a passable upper platform forming the sidewalk (Fig. 4.G, H).

On both sides of the street and, following its layout, the remains of two large buildings have been excavated, used for commercial and craft activities.[10] These buildings were divided into modules with the same spatial division and were constructed in stone, above which the mud walls and a tiled roof were erected. These buildings with a square ground plan – the biggest one measured 54 m in length and 12 m in width, the smallest one 25 m in length and 12 m in width – were divided into modules. The composition of these modules consisted of a passage with access to the street, flanked by to square rooms measuring 4 m in length and 3 m in width, thus they can be interpreted as shops. Furthermore, it consisted of a bigger room with a likewise square ground plan, measuring 9 m x 9 m that could be used as a workshop, *officina*, or for warehousing (Fig. 4.D, E and Fig. 6.).

In this respect, the presence of a furnace (Fig. 7) placed in the eastern building is worthy of attention. It corroborates the existence of a glass-production workshop, as well as material in the form of fragments and tries represented in the stratigraphic contexts belonging to this period. The presence of North African *amphorae*, a common ware of the Balearic Islands, in another module of this building, confirms that products from the Mediterranean area must have been sold in these buildings. Likewise, linked to the eastern

10 *Idem* 2001b, 385.

building, bivalve moulds have appeared (Fig. 8) for the manufacturing of objects such as earrings and rings, indicating the use of these rooms by craftsmen.[11]

At the south of the main street, a cistern for the public water supply has been found. It consisted of two rooms: one of them contained the cistern itself, a pit excavated to the geological level, 7 m x 4 m with a depth of 1.5 m. The other room can therefore be seen as having been related to the access to such infrastructure (Fig. 4.I).

Up until now, the area of the excavated houses shows how some houses were conceived in *Recópolis*. They consisted of two rectangular rooms with different functions and were spaced around courtyards, some of which may have been roofed (Fig. 4.F).

Recópolis in the context of urban revitalisation in the second half of the sixth century

During the phase of the formation and consolidation of the Visigothic State, developing in the second half of the sixth century, there is proof for a recovery of the building and urban politics linked exclusively to the Church and also to the new state.

Solely the role of the Church as an important protagonist of town planning in this period had been appreciated until now. Concepts such as "Christianisation of the urban topography" reflect the transcendent role of the Church in the society of the period. However, they do not represent the only element that characterised the city. In fact, I think that the importance of the Church must be analysed by paying attention to the place it occupied within the process of transformations taking place in this period and, therefore, it must be clarified as a concept and socially contextualised.[12]

In the sixth century, but especially in its second half, as well as the in the beginning of the seventh century, the written sources and the archaeological research documented important building activities by the Catholic Church in some of the most important cities of *Hispania*.[13]

As a result of these activities, an episcopal complex in Tarragona from the beginning of the sixth century and a martyrdom basilica from the second half of the sixth century in the ancient Roman amphitheatre could be verified.[14] On the other hand, in the middle of the sixth century a basilica was built in Cordoba, identified as the Cathedral, whose remains are beneath the Ummayad Mosque, near the Palace of the Visigothic Governors.[15] In the middle of the sixth century, the city of Valencia experienced the

11 Olmo Enciso/Sanz Paratcha/López Fraile/Gómez García/Agustí García/Gómez de la Torre Verdejo/Esquinas Rodrigo 2004, 327-329.

12 Olmo Enciso 1998a, 111.

13 *Ibid.*, 112-113; *idem* 2001, 387-390.

14 A.A.V.V. 1990, 234-235, 241; Macías i Solé 2000, 265-269.

15 Marfil 2000, 123-130.

Fig. 6. Buildings for commercial and craft activities

outstanding construction of the cathedral taking place in the area of the ancient Roman Forum; becoming the origin of a great episcopal complex at the beginning of the seventh century.[16] The city of Mérida provides an example of renewal undertaken by the bishops with the construction of a cathedral, the bishop's palace, the basilica and a *xenodochium*.[17] At this period, the end of the sixth and the beginning of the seventh century, the city of Barcelona also went through an enlargement and a monumentalisation of the episcopal complex and a new episcopal palace was built.[18]

In many of these cities, the archaeological investigation of the period provides eloquent details on how these activities undertaken by the Church are also related to the process of contemporary urban dynamism. In Cordoba, contemporary to the building of the Basilica of San Vicente, the construction of a series of suburban buildings, such as churches and monasteries, but also *vici* and palaces for the aristocracy, begins.[19] During the sixth century and the first half of the seventh century, a dynamism of the city is found in Valencia. Some examples of this dynamism are the vitality of the commercial contacts with the Byzantine territories of the Balearic Islands and of the North of Africa.[20] In the second half of the sixth century, in different parts of the city of Merida we can observe a process of transformation from the ancient Late Roman *domus* to common houses related to the community; as well as a progressive tendency within the new houses to occupy a part of the streets.[21] This phenomenon has been interpreted as a consequence of a growth of population in the city of Merida during this period.

In Barcelona, the process of reforms, enlargements and new constructions carried out between the sixth and the beginning of the seventh century are related to an important urban development of the city. The chronology of this process corresponds with a

16 Ribera i Lacomba/Rosselló Mesquida 2000, 171-185.
17 Mateos Cruz 1999; Mateos Cruz/Alba Calzado 2001, 150-153.
18 Bonnet/Beltrán de Heredia Bercero 1999, 74-93.
19 Acién Almansa/Vallejo Triano 1998, 109.
20 Ribera i Lacomba/Rosselló Mesquida 2000, 151-164; Rosselló Mesquida 2000, 207-217.
21 Alba Calzado 1999, 391-404.

Fig. 7. Furnace of a glass-production workshop

document entitled *Epistola de Fisci Barcinonensi*,[22] a valuable source showing the assignment to the bishops – on the part of the government – for the power and competence in the matter of tax collection. These politics of constructions and tax collection on the part of the bishopric of Barcelona, dating from the reign of King Reccared I at the end of the sixth century, would be more a consequence of the agreement between the state and the church established by the Third Council of Toledo. In fact, these constructions of Barcelona represented an outstanding example of their economic advantages.[23]

The state and the foundation of cities

A new and important aspect of this period is the participation of the state in the process of improvements in the urban landscape and in the foundation of cities. This royal policy of foundation or rehabilitation of cities is characteristic for the first phase of the Visigothic Kingdom (until the middle of the seventh century) and, thus, it is confirmed through both the written sources and recent archaeological research. In this context, besides *Recópolis*, the city of Victoriaco was founded in 581 and also the walls of Italica were restored in 583 during Leovigild's reign (569-586). Similarly, during Suintila's reign (621-632), the city of Ologicus was founded. Archaeological research likewise provides data on the foundation of other new urban centres, located in strategic areas for the introduction of the Visigothic State in the last quarter of the sixth century.[24]

22 Olmo Enciso 1998a, 112; Bonnet/Beltrán de Heredia Bercero 1999, 183.
23 Olmo Enciso 1998a, 111.
24 *Ibid.*, 114; *idem* 2001a, 389.

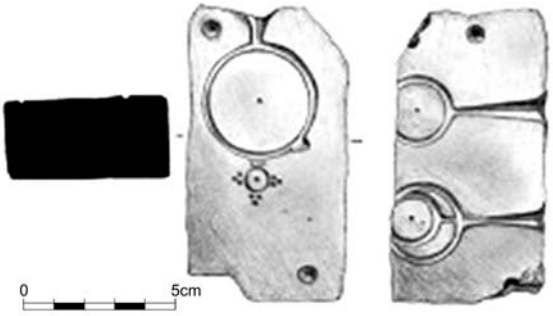

Fig. 8. Bivalve moulds

This policy of foundation and renovation of cities should be connected with the capacity of tax collection of the Visigothic Kingdom of Toledo at the time of its foundation as is reported by the written sources. Among other sources, Isidore of Seville gives evidence of this capacity by telling us how Leovigild enriched the revenue and increased the funds of the treasury by plundering the citizens and through the deprivations of the enemies.[25] Also, the reports on the foundation of Ologicus show how this event took place through tributes imposed on the Basques. Within this policy of creation of a state based on a controlled and centralised tax system, it is necessary to include the beginning of the currency coinage on the part of King Leovigild.[26] This context helps understanding the causes that facilitated the great urban foundation of this period: the city of *Recópolis*.

All the aforementioned urban policy of the Visigothic State was carried out during its consolidation phase, within approximately half a century – between the last quarter of the sixth and the first quarter of the seventh century – and it should be interpreted as an example of the initial success of this state.

But besides these examples documented by the written sources, at the present time the archaeological research also provides us with examples of new foundations. This is the case for the new foundation of El Tolmo de Minateda that – although being a small city – was the headquarters of an episcopal see and is the most remarkable example of a phenomenon of urban revitalisation that took place in the south-east region.[27] This urban revitalisation in this area of Iberia is interpreted according to the will of the Kingdom of Toledo to control, in an effective way, a region close to Byzantine territories.[28] Therefore, this new foundation and the other cases should be understood as a further example of the participation of the state in structuring and consolidating an entire region that was also of strategic importance for the success of the Visigothic State itself.

25 Isidorus of Seville, 51, 5.
26 Olmo Enciso 2001b, 384.
27 Gutiérrez Lloret 1996.
28 Abad Casal/Gutierrez Lloret/Gamo Parras 2000, 196.

In the peninsula, although outside the political territory of the Kingdom of Toledo, we come across another two illustrations of this policy of participation of the state in the shaping of the urban landscape. On the one hand, Cartagena is the best documented centre, as a consequence of being the capital of the peninsular Byzantine territories.[29] In the Suevic Kingdom, we also have evidence of the participation of the state in this policy of urban revitalisation in the second half of the sixth century. On the Hill of Falperra that dominates the city of Braga, capital of the Suevic Kingdom, several buildings protected by a wall were located. Soon after the investigations in *Recópolis* and because of functional and topographical similarities, this place has been identified as a palatine complex dominating the city with its *acropolis*.[30]

Naturally, all these urban impulses – where both the church and the state were involved from the middle of the sixth century on – reflect the importance of the city in the structuring of the society of the time. In this sense, the urban landscape will be the main centre of attraction of an important part of the social conflicts that developed in this period. In fact, the political and economic power that the Catholic Church possessed as of the middle of the sixth century – for which its building policy is a clear example – meant a threat for the attempt to create a centralised state controlled by the monarchy. This state further tried to merge ideologically by declaring the Arian Church to be the official one. I believe that this should be analysed as an attempt to diminish the power of the Catholic Church and, possibly, as a way of depriving it of its prerogatives of social and administrative control. In this sense, it must be remembered that until that time there is no news reflecting conflicts among Catholics and Arians. The recognition of the Catholic Church as a social protagonist by king Reccared I (Third Council of Toledo) reflects the necessity to incorporate this church into the own structure of the state. This means the recognition of the role of the bishops in the government of the cities, as well as their scopes in regard to tax collection.

In this period, i.e. the second half of the sixth century, during Leovigild's reign a series of representative figures of the city government were installed: on the one hand, the *comes civitatis* as well as his subordinates, the *vicarius*, the *iudex loci,* and the *defensor civitatis*. This policy was to increase with King Reccared I with the incorporation of the bishops into the structure of the city government, promoted by the state.[31]

Therefore, during the phase of formation and consolidation of the Visigothic State, we attend a revitalisation of the constructive, urban and legislative policy related to the city. Everything points out the role of the city as a fundamental centre of the social and political structure of the time and of the growing state. The large urban centres analysed here (that is, Mérida, Córdoba, Valencia, Tarragona, Barcelona, *Recópolis*....) are

29 Ramallo Asensio 2000, 579-611.
30 Real 2001, 26-28.
31 Olmo Enciso 1998a, 110-111; *idem* 2001b, 382-383.

economic centres and bases of the tax system, as can be seen in the fact that all of them own a mint, or the diversification of their archaeological materials (import products, craftsmanship and commercial areas, markets, etc.). All of this should be related with the process of a strengthening of the structures of the state, the church being involved in this process, mainly from the agreement with the monarchy implied by the Third Council of Toledo in the year 589. It is at this time, when a series of episcopal groups was enlarged – whose construction had begun in the middle of the sixth century – in Barcelona, Tarragona, Valencia and Mérida.

In this whole process, the foundation of *Recópolis* constitutes a clear example of the state's power at the moment of the consolidation of the Kingdom of Toledo, as well as the real expression of the growing state's ideology. In this sense, the intention of Leovigild of becoming similar to the Byzantine Empire is evident, in an *aemulatio imperii*, through the foundation of a city *ex novo*. With the foundation of *Recópolis*, named after a member of the king's family, his son Reccared, Leovigild compares his actions with the practices of the Byzantine emperors. But it is also a clear example of a dynastic statement that reflects the king's intention of consolidating a state ruled by his own dynasty.

The foundation and the first phase of the occupation of *Recópolis* is the most valuable example demonstrating a participation of the state in the urban planning through the foundation and improvement of the cities. In addition, it presents an example of the urban conceptions of the period, showing how these hold characteristic features in respect to the Late Roman cities. The rest of the cities analysed here, as well as the new magistracies, show how in this second half of the sixth century as a consequence of a social frame a new urban landscape was being formed.

Together with the period of consolidation of the Visigothic State, a process of crisis followed, during the rest of the seventh and the beginning of the eighth century. This crisis of the Visigothic State is the fundamental factor when analysing the process of decrease of the urban activity taking place within this period. In fact, the reasons that gave rise to this process are different, depending on whether they are related to the state or to the church, although inserted into the same process of social transformation.

Regarding the state, we face a weakened structure with a tax system in crisis. The weakening of this system was to affect the city in a decisive way with the resulting crisis of urban activity on the part of the state. This produced processes of urban destructuring, which seems to be documented in some cities of this period, like in the case of *Recópolis*, Mérida, Córdoba, Barcelona and Valencia.[32]

In *Recópolis*, this period was to be characterised by a process of transformations affecting the urban landscape of the city. This meant a transformation of the urban landscape of the foundation period, evidenced by a process of occupying of open

32 *Idem* 2001, 390-392.

areas, the closing of open spaces and the construction of buildings of inferior quality therein. This process seems to verify a loss of the original function the commercial buildings were once constructed for. Several spaces were now transformed into housing areas. Nevertheless, this process of transformation does not imply the decline of any productive activity, since the areas dedicated to glass production expanded in this phase. In this period, it seems that the city transformed from a planned one, similar to the Byzantine urban programmes characteristic for the foundation and conception of *Recópolis* to an urban settlement that**,** although maintaining some aspects of its productive and commercial activity, were not as diversified as the ones that characterised the foundation phase.[33]

Likewise, the ecclesiastical building activity in the cities declined considerably in this period. Unlike the state, the church – a great owner of goods and partly encouraging and beneficiary in this period of the crisis of the tax system – continued its building activities, now in the rural environment, through the construction or restoration of churches and monasteries.[34] This abandonment of urban activities in benefit of rural ones constitutes a example of how the church participated in the defence of a model of feudal society, unlike its position in the previous phase. In regard to this activity, it followed the example developed by the aristocratic landowners in this occasion, of which Pla del Nadal offers a good example.[35]

Therefore, from the investigation in *Recópolis*, it has been demonstrated that the period of consolidation of the Visigothic State lasted from the second half of the sixth until the first decades of the seventh century. During this period, the already analysed phenomenon of urban revitalisation took place. During the rest of the seventh century and the beginning of the eighth century, a period of crisis was to follow that was also reflected in the city.

Of course, the process of urban revitalisation exposed here affected a great number of cities; however, at that moment, it could not have become widespread among the whole peninsular setting. In fact, this process affects important cities for their administrative, fiscal and economic function even until now. But the urban reality of the peninsula is not only defined by this type of cities. The examples of other centres of smaller dimensions point to a non-homogeneous urban phenomenon, defined rather by the cultural and socio-economic characteristics of the territory in which they were located.

33 *Idem* 2002, 471-472; Olmo Enciso/Sanz Paratcha/López Fraile/Gómez García/Agustí García/Gómez de la Torre Verdejo/Esquinas Rodrigo 2004, 329-331.

34 Olmo Enciso 2001a, 392.

35 Juan/Lerma 2000, 135-142.

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Chapter II

Emporia in the North and the Carolingian East

Recent archaeological research in Haithabu

Claus von Carnap-Bornheim & Volker Hilberg

1. Introduction

There is scarcely another undertaking dealing with early medieval archaeology and history of Northern Europe which can look back at such a long tradition as that of the research project of Haithabu.[1] For over one hundred years excavations, investigations, analyses and publications have been carried out here, thus granting this place an influential position in the network of international research.[2] Situated in the north of Schleswig-Holstein, the settlement, its harbour and the associated cemeteries and defences must firstly be considered against the background of the early medieval world between the North Sea and the Baltic, whilst having an intensive look at the archaeology and history of Central Europe. Even the distant world of Western and Central Asia and the coasts of the North Atlantic and Newfoundland comprise frames of reference in the economic, social and military world of the Scandinavian Vikings. The special location of the Haithabu site can only be understood, however, by examining the Jutland Peninsula more closely. Whereas the Treene and Eider rivers cut into it in the west, the Schlei – a genuine Baltic fjord – forms a barrier to the north-east. The rivers and fjord thus give rise to a narrow corridor, the so-called Schleswig Isthmus. The remarkable geo-strategic situation is secured by the Danevirke with its impressive structures and by the naval blockade at Reesholm[3] – a constellation with few comparisons in the North. It is not surprising, therefore, when the Viking age settlement on the Schlei is assigned a central function and significance, for example, in the long distance trading routes of the eighth-tenth centuries, as mapped by S. Lebecq (Fig. 1).[4]

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1 For a summary with extensive reference to further literature, see Laur/Radtke/Wiechmann/Stoklund 1999. – A detailed introduction is offered by Jankuhn 1986.

2 Cf. Jankuhn 1984.

3 For recent material on the Danevirke, see Hellmuth Andersen 1984; *idem* 1998; *idem* 2004. – For the naval blockade at Reesholm, see Kramer 1992; *idem* 1995. – On the importance of the Schlei in the Viking period, see Dobat 2003.

4 Lebecq 1983, 193-202, fig. 51; cf. Jankuhn 1986, fig. 63.

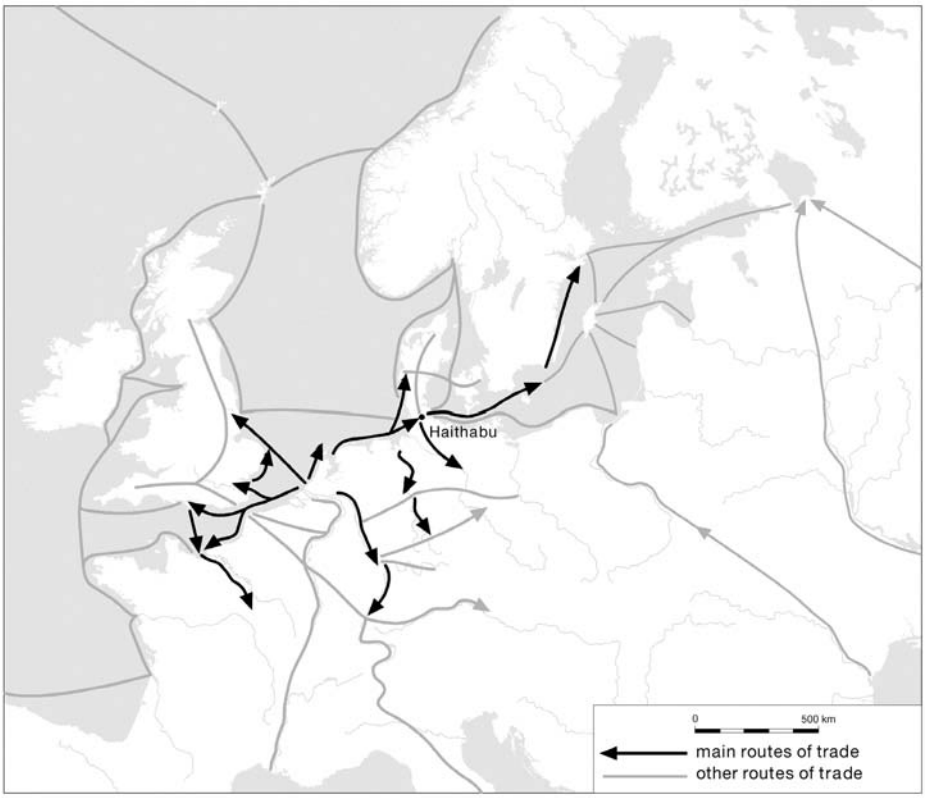

Fig. 1. Trading routes in the early Middle Ages from the eighth to the tenth centuries

Haithabu itself lies on the Haddebyer Noor at the western end of the Schlei, the c. 27 ha settlement having not been enclosed by a massive semicircular rampart until the second half of the tenth century. In the waters directly in front of the settlement area is the harbour of Haithabu where Shipwreck I and Shipwreck II were found – testaments of immense importance for Viking age shipbuilding.[5] Evidence had been found for settlement and burial areas inside and outside the semicircular rampart. There are also the rune stones, large burial mounds, destroyed cemeteries and the smaller settlements from the hinterland,[6] which must also be reckoned with as part of the infrastructure of the early medieval *emporium*.[7]

5 Crumlin-Pedersen 1997.

6 Müller-Wille 1994/1995; *idem* 2002; Dobat 2004.

7 For a definition of the term *emporium* cf. Steuer 2003.

Of prime importance here is Haithabu's location on the southern border of Denmark. Among the neighbours in the west and on the North Sea coast was the Frisian population, while in the south was a German/Saxon population and in the south-east a Slav population.[8] According to the first written record in the "Frankish Royal Annals", a Danish king called Godfrid gathered in 804 with his fleet and his cavalry at Sliesthorp, a place at the southern border of his realm near an earthwork which protected the Danish border, the later so-called Danevirke.[9] Four years later, after the destruction of the *emporium* Reric, he once again went with his fleet to that place which is now named *portus*.[10] Several researchers suppose that he settled the displaced merchants from Reric in Sliesthorp.[11] The *emporium* of Haithabu was known as Sliesthorp or Sliaswich to the Germans, as æt Hæthum to the Anglo-Saxons and as at Haithum or Haithabu to the Danes.[12] In the eighth century, Denmark had increasingly participated in the North Sea exchange and trading system between the Franks, Frisians and Anglo-Saxons and it is presumed that not only was the Danish kingdom able to establish a new centre of commerce in Ribe but that it was also able to take over dominance of the North Sea from the Merovingian kings and to start and maintain an internationally based trade.[13] The first written records stress Haithabu's importance as a harbour near the Danish border and its related military significance.[14]

There is no doubt that Haithabu is also being assigned today a key role in early medieval urbanisation studies in Northern Europe.[15] Further relevant components are being added to the complex system of settlement and harbour: royal graves like the boat chamber burial of Haithabu[16] provide information about the worldly power in the place. The written records as well as the archaeological find material elucidate its central importance in the complicated Christianisation process which peaked in the early

8 Jankuhn 1986, 53-55, fig. 24a ; Näsman 2000, 57.

9 *Annales regni Francorum* s.a. 804; Lund 1995, 205.

10 *Annales regni Francorum* s.a. 808. – For the meaning of Latin portus cf. Schlesinger 1972, 76, who stresses the significance of Latin *portus* as a harbour. Verhulst 2002, 89; 91 understands portus like *civitas*, *castellum*, and *vicus* as designations for towns.

11 Schlesinger 1972, 77-78, points out that this event is not directly mentioned but that a movement should be clear from the context. – A movement of the Reric merchants to Hedeby is favoured, for example, by Steuer 1984, 189; also Lund 1995, 207.

12 Laur/Radtke/Wiechmann/Stoklund 1999, 361-363; Marold 2001. – According to the first book of the late tenth-century chronicle of the Anglo-Saxon Ealdorman Æthelweard this place, the *oppidum capitale* of the Angles, was called *Slesuuic* by the Saxons and *Haithaby* by the Danes. Campbell 1962, 9.

13 Wood 1983, 19; Lund 1995, 205. Cf. also Näsman 2000, 62-64.

14 Näsman 2000, 57; Hilberg in print.

15 Jankuhn 1958; Callmer 1994.

16 Müller-Wille 1976; Wamers 1994.

ninth century with the mission of Ansgar and again in 948 AD when the bishopric was established.[17] The military function of Haithabu, however, will only then be able to be judged properly when the history of the Danevirke is looked at in close relation to the development of the settlement itself. Up until now the function of the place as trading centre for ideas and technical know-how has not been investigated at all. Thus it is scarcely possible to assess in which manner and at what time developments from the south or from the west were advanced or indeed strangled by the structures and powers at Haithabu.[18]

Before looking at the latest approaches and results of the research in Haithabu, the basic conditions will again be briefly gone through. Of major importance is the fact that nearly all the academic work undertaken is in the Archives of the State Archaeological Museum in Schleswig, which was until 1947 in Kiel. The documentation of each year's campaign since 1900 consists of handwritten reports, scaled drawings and photos of selected features as well as cards with descriptions and drawings of find material. Considering the immense losses incurred elsewhere during World War II, we are lucky here to have an almost complete documentation at our disposal. As well as this, Schleswig was fortunate in having researchers of the highest standard who were extremely professional, which was by no means usual, especially in the pre-World War II period. Furthermore, since 1930 all excavators had made use of the zero point in surveying (as defined by Herbert Jankuhn). This not only has made today's work with modern geographical information systems easier, it is also in itself an expression of the great continuity in research.

The wealth of find material from more than a century of work in Haithabu itself is, for the most part, published. Publishing activity in recent years has concentrated on the find material from the expansive excavations in the settlement and in the harbour.[19] Although the stray finds from the settlement area have been considered in these works,[20] they have not to date been integrated in the methodical framework of the project. Amongst the most important works which have been driven forward intensively over recent years have been the analyses of the countless number of timber finds from the settlement excavation and the related dynamism in concrete historical facts regarding the settlement, as well as the archaeological analysis of the harbour

17 Schlesinger 1972; Radtke 1984; Müller-Wille 2004.

18 Cf. Hilberg in print.

19 At present volumes 35 and 36 from the series "Berichte über die Ausgrabungen in Haithabu" are in editing. They contain the analyses of the bones from the harbour and deal with coins and the beads of carneol and rock crystal. So far 10 volumes of "Ausgrabungen in Haithabu" have appeared, the next volume will deal with the hoard of *dies* found in the harbour.

20 On the systematic field-walking cf. Schietzel 1981, 21-22, map 23.

and its buildings.[21] In both works there have been several thousand structural timbers to deal with and c. 3250 have been dendro-dated. Naturally this has, in the first place, led to a chronological archive being opened up and analysed upon which, on the one hand, all further investigations have to build while, on the other hand, allowing or requiring the new assessment of material published up to now.

Present research too is only conceivable in close association with the resources of the State Archaeological Museum in Schleswig. It is here that the new finds undergo conservation and are stored, the archive containing almost the complete stock of available documentation. The archaeological-zoological working group based in the museum is firmly established as an efficient and capable research body. Moreover, close links exist between the relevant institutions in the Christian-Albrechts-University in Kiel such as the Faculty of Geophysics and the C14 Laboratory, to name but two. Important partners also include the Federal Research Institute for Forestry and Timber Industry in Hamburg, which even today is still concerned with the further evaluation of the dendrochronological data. Of crucial importance is the close contact with colleagues from Scandinavia, co-operation with working groups in Ribe, Tissø, Uppåkra and Kaupang having been intensified in recent years especially. This network is now being supplemented by a new project in Wiskiauten in Samland (known today as Mochove in the territory of Kaliningrad) where field exploration is being carried out from 2005 onwards in co-operation with the Russian Academy and the Römisch-Germanische Kommission of the German Archaeological Institute.

2. Research history: excavations and prospecting

2.1. Outline of the excavations

The synoptic mapping of the excavations from the past 100 years (Fig. 2), clearly shows that it is in the central eastern and southern parts especially that the larger expanses have been examined. Other parts, however, could only be investigated by trial-trenching or by systematically planned excavations at selective points. Though providing an introductory overview, these hardly allow a differentiated insight into the great expanse of the settlement.[22]

21 These analyses ensue within the framework of two dissertations. Joachim Schultze is working on the dendro-dated structural features, cf. Schultze 2005; Sven Kalmring is analysing the harbour structures, cf. Kalmring 2006.

22 For this cf. Schietzel 1981, 89-90, who describes the investigation of larger topographical connections for aquiring a better understanding of the structural arrangement of the settlement complex as one of the future tasks of Haithabu research; Jankuhn 1986, 91-92.

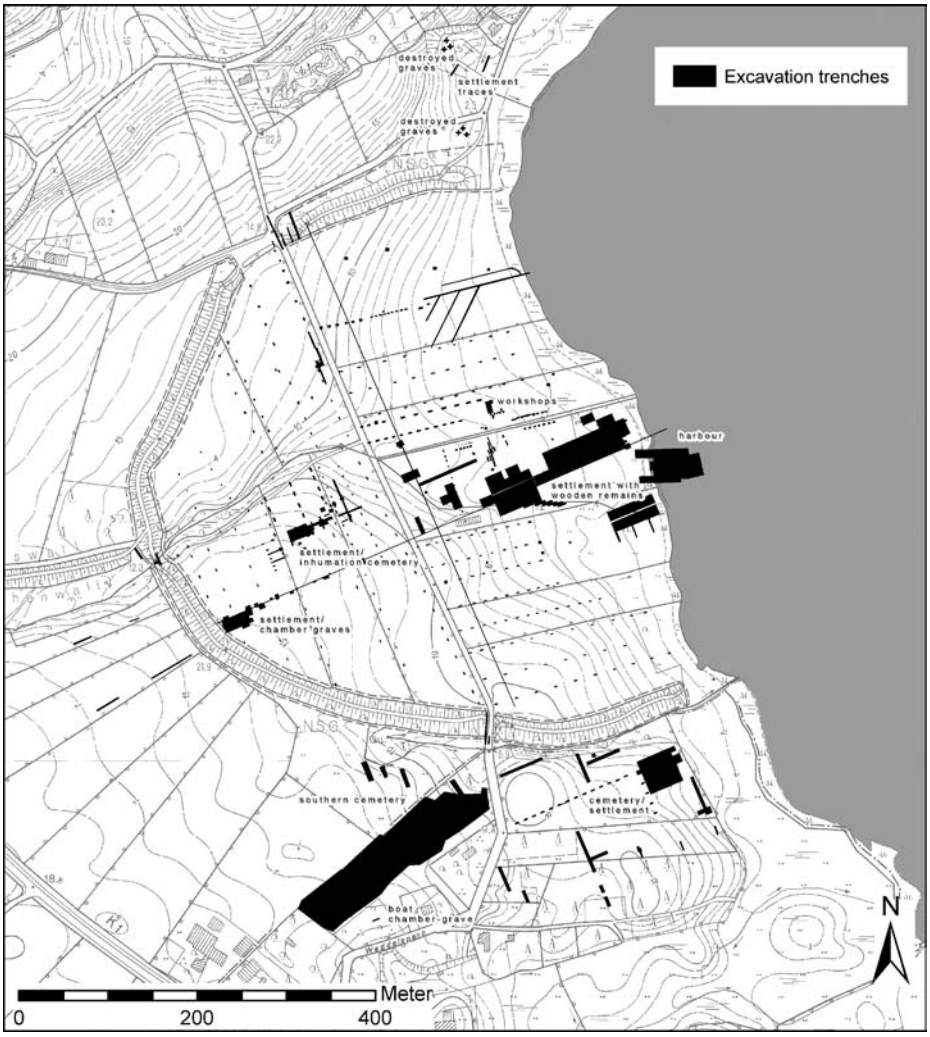

Fig. 2. Main excavation trenches in Haithabu from 1900 to 1980

In 1897 Sophus Müller identified the area inside the huge and well preserved semi-circular rampart at the western side of the Haddebyer Noor, an inlet of the Schlei/Slie fjord, as the place mentioned on Viking age runic inscriptions found nearby as Haithabu.[23] To reveal the character of the place Johanna Mestorf, director of the Museum für Vaterländische Altertümer in Kiel, started with small-scale excavation trenches all

23 Müller 1897, 636-642, figs 395, 396; *idem* 1898, 232-238, figs 143-144. – DR no. 1+3.

over this area in the year 1900. In the following years until 1915 and once again in 1921 her colleagues Wilhelm Splieth and Friedrich Knorr dug more than 350 small trenches, revealing the deposits and wooden remains of Haithabu. In addition some 500-700 inhumation burials from a huge cemetery inside the rampart were excavated between 1902 and 1912. The exact number is very difficult to say because of several cases of superimposition and destruction caused by later, overlying settlement structures.[24] While the impressive boat chamber grave, which was investigated in 1908, was published in detail in 1911, the first full analysis was provided by M. Müller-Wille in 1976.[25] Only in one article published in 1924 did Knorr briefly inform of the results from all his excavation campaigns.[26] But his excavations turned the attention from the burials to the thick cultural layers near the coastline, especially in the depression crossed by a small stream.[27]

In 1930 the excavations were started again with a trial trench, which was dug by the young Herbert Jankuhn during his work extending over four years. This trial trench, in most parts not wider than one metre, extended about 530 m from west to east and about 585 m from north to south. Only in some parts was this trench widened because of special features: in the West Jankuhn excavated a group of ten chamber burials, which were surrounded by ring ditches as well as one cremation and two inhumation graves. This part of a cemetery was superseded by a later settlement of several sunken-featured buildings consisting of different phases with wells and pits. Unfortunately the results of these excavations were never published in detail.[28] From 1935 on Jankuhn concentrated his excavations in the low-lying areas near the coastline, which are characterised by well-preserved wooden remains and a stratigraphy up to 2 m in depth.[29] These investigations were continued in 1962 by Torsten Capelle and from 1963 to 1969 by Kurt Schietzel.[30] The excavated settlement structures form the basis of our knowledge of Haithabu and its layout in the Viking age.[31] Approximately 5 % of the area inside the semicircular rampart has been able to be excavated

24 Arents 1992/1991, 22-31.

25 Knorr 1924, giving only a very short summary of the excavated features.

26 Knorr 1911; Müller-Wille 1976; Wamers 1994.

27 Knorr 1924, 27.

28 Besides very brief summaries the most detailed report on the settlement structures excavated from 1930-1933 is given by Jankuhn 1933; Jankuhn 1986, 93-95, fig. 42; the chamber-graves were published by Aner 1952, but without detailed information of the burials and their grave-goods.

29 Jankuhn 1936; *idem* 1943.

30 Capelle 1964/65; Schietzel 1969; to sum it up Schietzel 1981.

31 Schietzel 1981; *idem* 1984; Jankuhn 1986, 95-100, plan 2. – Clarke/Ambrosiani 1991, 138-141 for Viking age street plans and plot arrangement.

but only a small part has been analysed and published comprehensively.[32] Most of the preserved timber remains date to the ninth century, but wood was not preserved in the upper layers. Only a well with a *terminus post quem* of AD 1020 provides the latest dendro-date from Schietzel's settlement excavations.[33]

To the north, lying at the south-eastern slopes of the hillfort, remains of graves destroyed in the nineteenth century and a settlement pit have been found.[34] In the south of the rampart remains of inhumation and cremation burials were found by chance in 1956 and this subsequently led to large-scale excavations over several years. Klaus Raddatz, Heiko Steuer and Konrad Weidemann investigated large parts of a huge bi-ritual cemetery, Raddatz and Steuer also excavating parts of an older settlement in the eastern area near the coastline. While Steuer published the structures of the settlement, the cemetery has not yet been published in detail.[35]

2.2. Prospection: geomagnetism and field-walking

The long history of research as too the methods and techniques of research employed can only be discussed briefly here. Excavations and surface inspections have constituted the central approaches in the last 100 years of inquiry into Haithabu's past. Since 2003 metal detectors have been additionally used as a systematic tool for scientific purposes and on grounds of monument preservation/protection.

Geophysical methods have also been employed repeatedly – in the water as well as on land – in order to investigate the settlement on a larger scale and to better understand its development.[36] In use today are high-tech devices such as caesium or fluxgate magnetometers. Under favourable conditions it is possible to measure manmade disturbances in the surrounding geomagnetic field. In 2002 such an investigation was able to be carried out over an area extending about 29 ha. The surveyors, comprising teams from Kiel, Marburg, Munich and Vienna examined ground both inside and outside the semi-circular rampart[37]. The spectacular result (Fig. 3), an almost complete map of an early medieval settlement complex, shows a multitude of magnetic anomalies, which can be interpreted as pits, pit dwellings, working areas, graves, roads/trackways and ditches.

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32 Schietzel 1981, 21; Laur/Radtke/Wiechmann/Stoklund 1999, 364.

33 Eckstein 1976; Schietzel 1981, 68-69.

34 Jankuhn 1986, 80, 87, the materials of the settlement pit still remain unknown; for a critical view see Stark 1988, 49-50 – Arents 1992/1, 14-18.

35 Steuer 1974; *idem* 1984, 192-194; Jankuhn 1986, 100-102; Arents 1992/1, 44-53.

36 Stümpel/Borth-Hoffmann 1983; Utecht/Stümpel 1983; Kramer 1998/1999.

37 The survey was kindly financed by the Deutsche Forschungsgemeinschaft and the ZEIT Stiftung – preliminary survey results appear in Neubauer/Eder-Hinterleitner/Seren/Becker/Fassbinder 2003.

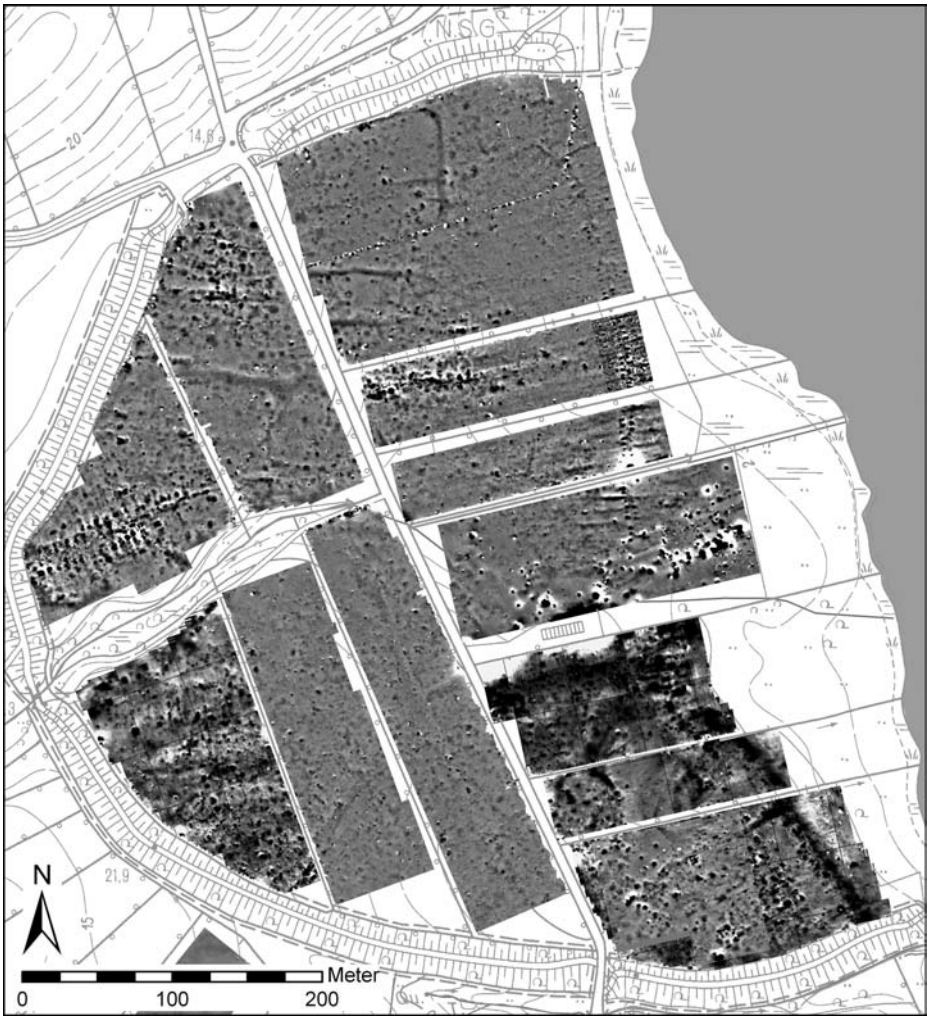

Fig. 3. Haithabu: Combined results of the magnetic survey in 2002 by the Marburg, Munich and Vienna teams. Dynamics ca. -10/+10 nT

The area within the rampart with its high density of anomalies differs clearly from the surrounding outer areas where only a few features were evidenced.

In the north-western settlement area within the semicircular rampart and north of the stream there is a zone extending about 3.7 ha which is distinguishable by parallel courses and numerous rectangular or square-shaped structures. Being well ordered and aligned purposefully in rows, it is possible to recognise trackways or alleys here (Pl. 18), which distinguish themselves by their especially high rate of magnetism. The

mapping of iron slag in this zone, thanks to Kurt Schietzel and his systematic field-walking activity in the 1960s (parallel to his excavations), provide us with clues as to its function.[38] In all probability we are dealing with the working sheds and dwelling huts of smiths,[39] who were forging iron here in a narrowly delimited space in the tenth and eleventh century. The features demonstrate in exemplary fashion that an internal structure based on function can be reckoned with within the settlement[40] even though in other zones of the settlement one may assume, due to various pieces of evidence, that the most varied of workshop types were in close juxtaposition. We know from the 1913 excavations, for instance, that in the area later described by Jankuhn as the "craftsmen's quarter" [41], there was a glass furnace directly beside the bronze-casting workshop.[42]

A linear feature, running parallel to the river bank in the east of the settlement and evidenced by magnetism is also very informative. Obviously it is formed from pairs of opposing house plans (Pl. 18). Without any problems it is possible to follow this path over the whole area by the river bank area over a length of about 530 m. Thus recognisable is an urban development of the harbour area which could already be shown to exist to some degree through the excavations of H. Jankuhn and K. Schietzel.[43] The documentation from the excavations and the current results of the geophysical prospection complement one another in this case almost ideally. It should be mentioned here that corresponding trackway courses are characteristic of early medieval trading centres and have been shown to exist, for example, in Viking age Dublin and Sigtuna on Lake Mälar in Sweden.[44] The wooden bridge over the Haithabu stream provides us with a date for this trackway. It was constructed of an oak tree which was felled in the year 819.[45] Therefore the trackway must have already existed in the first quarter of the ninth century – but how long it was at the beginning we still do not know.

One important question concerning the *emporium*'s topography still remains unsolved. We still know very little about Haithabu's topography of power and religion. Neither a representative hall nor an early church nor a heathen temple have been found

38 Schietzel 1981, maps 28-29; Westphalen 1989, 28-36, figs 5-7.

39 This was already interpreted by Jankuhn 1986, 92.

40 Jankuhn (1986, 92) already suggested ironworking workshops on account of the accumulation of iron slag in this area; somewhat more reserved was Schietzel 1981, 75; Westphalen 1989, esp. 36.

41 Jankuhn 1944; *idem* 1977.

42 Cf. Hilberg in print with fig. 8.

43 Jankuhn 1943, esp. 38-40, 49-50, fig. 4 left the question open as to whether the track running north-south was the "main street" or a "small side alley"; *idem* 1986, esp. 98-99 with fig. 39; 40. – Schietzel 1969, esp. 19-21 with reference to "wide main road".

44 Clarke/Ambrosiani 1991, 138-141, figs 5.5, 4.23.

45 Eckstein 1976. – For detailed account of the feature, see Schietzel 1969, 21-26, figs 10-14.

inside the rampart or in its surroundings. But a royal residence could be concluded since the earliest written records.[46] Furthermore, a church is known from the written records and it is possible that the earliest wooden church lay below the late twelfth century St Andrew church in the wetland to the north-east of the hillfort near the Schlei.[47] It seems to be a typical location in terms of topography for a church outside a central settlement area but in a prominent position.[48] Interestingly R. Hodges has pointed out that the lack of monumental buildings and ritual components is characteristic for early medieval *emporia*.[49]

The large number of structures that have been found to exist by means of geophysics is overwhelming and, at times, indeed confusing. They show the cramped development of a settlement area enclosed by a rampart since the second half of the tenth century, which, in its heyday, was dwelt in by more than 1000 people – or even by 2000 people.

An important component of current research in Haithabu is the combination of the almost complete record of excavation documentation of the past 100 years with the current geophysical investigations. Employed here are geographical information systems and extensive data banks which allow, among other things, the comparison of the surveying results with those from the excavations as well as from field-walking and metal detector testing.[50] Thereby it becomes clear that the rough grid of the geophysical anomalies and structures can be interpreted meaningfully. Problems arise, however, especially in those areas where the stratigraphy attests to different archaeological structures, the stratigraphy being particularly deep in places. In the south-western part of the settlement (Pl. 18) there are pit dwellings and graves overlying one another. In this case the unambiguous allocating and dating of the surveyed anomalies is only possible by comparing the old excavation records.[51] Evaluations to date have led to important results which are planned to appear within the framework of a comprehensive publication. Yet, in summary, it can be already be stressed today that the data and the archives of earlier research, against the background of more recent examinations, can be used in a virtually ideal manner in chronologically ordering the structures proven using geophysics as well as interpreting their function and social meaning. This will also be the object of further research in the future.

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46 Schlesinger 1972, 76-77, points out that for the planned *consilium* in 804 between Godfrid and Charlemagne a representative hall was needed.

47 Cf. Staecker in print.

48 Olsen 1999, esp. 65-66.

49 Hodges 2000, 70-71, 89.

50 The card index system which forms the basis for all material analyses and which was developed under K. Schietzel's direction offers a superb basis; Schietzel 1981, 22-28.

51 For this see Jankuhn 1986, 91-92, 97, 107.

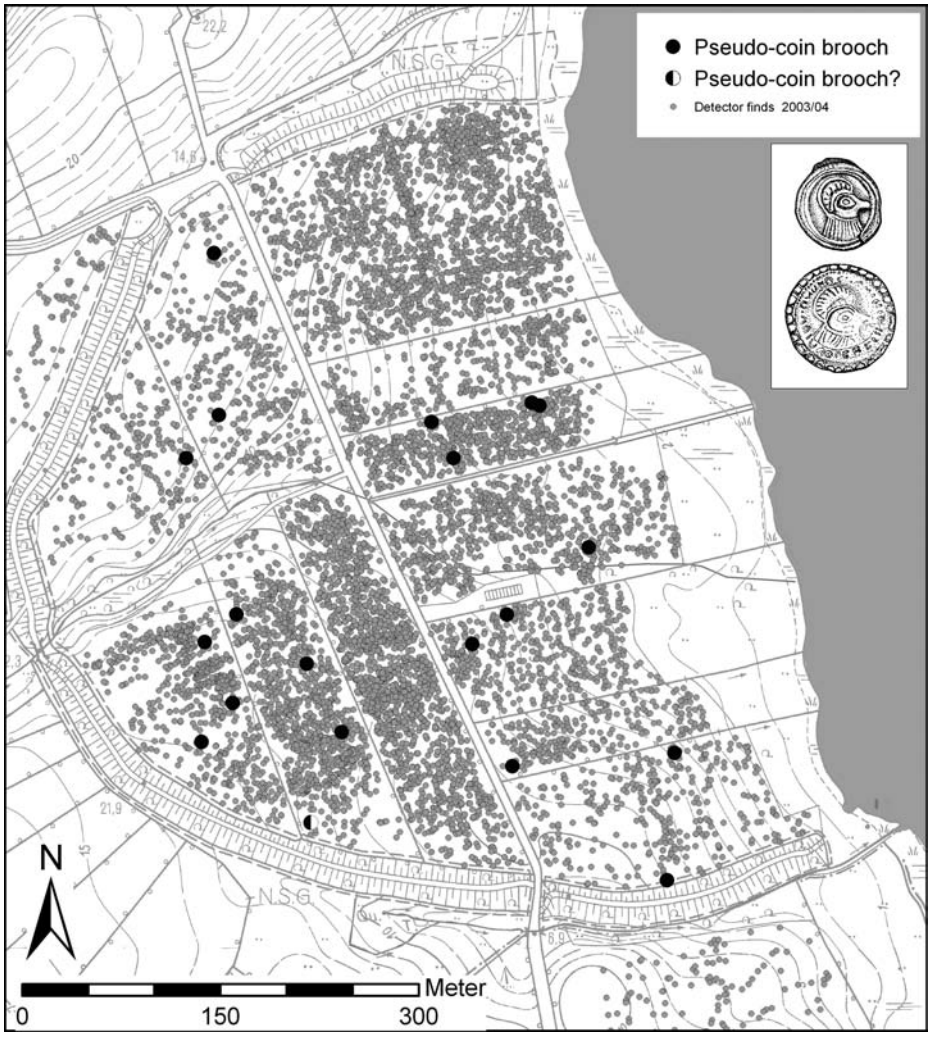

Fig. 4. Haithabu: "Pseudo-coin brooches" found by metal-detecting during the 2003/2004 campaigns

2.3. Metal detecting

The systematic prospection with metal detectors[52] which has been in operation since 2003 and which is still in progress has brought a wealth of new small finds of the Viking age to light but no new eighth century metal finds, not even from the southern

52 We owe especial thanks to the members of the Bornholmske Amatørarkæologer for their enthusiastic participation.

Fig. 5. Haithabu: Silver deniers from various German mints found by metal-detecting: 1-2: Archbishop Pilgrim and King Conrad II., Cologne, t. p. 1027; 3. Archbishop Hermann II., Cologne, t. p. 1039; 4. "Bogenkreuz/Tempel"-type, Bardowick?, t. p. ca. 1035; 5. Ostfalen/Saaleregion, anonymous mint MgHP3 (Halle-Giebichenstein), Archbishop Gero (1012-1023)? – Archbishop Hunfried (1023-1051)?, ca. 1020-1030; 6. King Henry III., Lower Lotharingia, Duisburg, t. p. 1046/47. Diameter of no. 1 = 18 mm

settlement site. This may be connected with the minor importance of Haithabu in the eighth century. It was only during the course of the ninth century that the place developed into the leading Danish trading centre, superseding the older trading centre of Ribe on the North Sea in the second half of the ninth century.[53] Somewhat overrepresented among the finds made by metal detecting are those small finds from later settlement strata which come from the former plough layer. There is clear evidence for the most diverse of groups of objects in use since the middle of the ninth century as elucidated below by the so-called "pseudo-coin brooches" of continental origin (Fig. 4), for which now, for the first time, more extensive series are available in Haithabu.[54] Whereas previously there were only seven of these fibulae from Haithabu which could be assigned to variants 2 and 3 of Frick's coin brooch typology,[55] there are now 20 further brooches from the metal detecting surveys, these having been spread over nearly the whole area within the semicircular rampart. Metal detector finds have also made it possible for us to understand more clearly the late phase of Haithabu in the eleventh century for the first time. In the harbour as well as in the settlement there were, up until now, no dendro-dates for the late phase[56] apart from a well dated to 1020. Besides the few Anglo-Saxon pennies of King Æthelred II (978-1016) and the various Danish eleventh century coinage, the most dominant coins are German deniers which stem largely from the different mints in Lower Lothringia. These coins (Fig. 5) and small finds in the

53 Nyman/Jensen/Stoklund 2003; Jensen stresses *ibid*., 552, that the cultural layers in the area of the market place stop about the middle of the ninth century. To date there have been few finds and no features for the tenth and eleventh century in Ribe. We are grateful to C. Feveile, Ribe for kindly providing us with this information. – Hilberg, in print.

54 Berghaus 1994, esp. 113-115; Schulze-Dörrlamm 1999; Spiong 2000, 45-47, pl. 3.2-3.

55 Frick 1992/93, 309-313, find list on p. 392-393, no. 11, 12, 14, 15, 19, 20, 21.

56 Eckstein 1976; Schietzel 1981, 68.

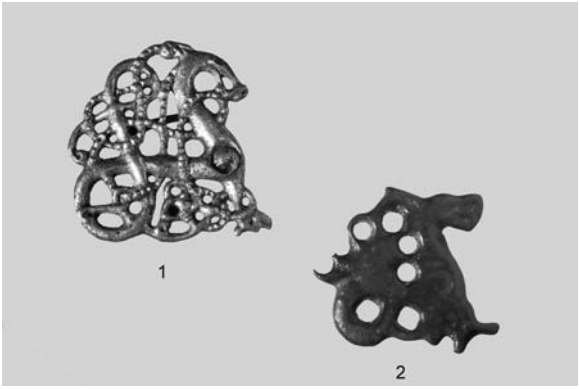

Fig. 6. Haithabu: Animal brooches in the Urnes Style found by metal-detecting. 1. Gilded silver, 36 x 36,5 mm; 2. Bronze, 29 x 28,5 mm. Middle/second half of eleventh century

so-called Urnes Style (Fig. 6) show that the *emporium* of Haithabu was a trading centre of international significance right into the middle of the eleventh century.[57] Dies, models and moulds (Fig. 7) for various tenth and eleventh century ornamental objects point to crafts production on the spot as in earlier times.

The systematic use of metal detectors, alongside that of geophysical prospecting over a wide area, allows further alternatives in studying the internal structure and functional zones within the settlement complex of Haithabu.

3. Perspectives for Haithabu research

The surprising success of the geophysical prospecting is starting point and engine for a new stage (planned to be longterm) in the long history of research in Haithabu. Thereby it is necessary first of all to integrate the old data and records by means of geographical information systems. This will not only secure the data stock with lasting effect but will allow for the gigantic amount of data to be compiled in useful systems and to interpret it along various lines. Methodically it appears extremely important to link the detailed excavations in the settlement area and the harbour which represent the ninth century best of all with the structures located employing geophysics, which are possibly of tenth century date. This data material is being substantially complemented by the metal detector finds which come from the latest stratum – the tenth and eleventh century soil horizon which has been largely destroyed by agricultural activity.

The geophysical survey is not yet complete. A relatively wide strip along the water bank zone, where difficult soil conditions prevail, has not yet been surveyed (Fig. 3).

57 Callmer 1994, esp. 72, emphasizes that the youngest feature horizons could actually be destroyed – Hill 2001, 107 writes of Haithabu's loss in importance in the late tenth century.

Fig. 7. Found in Haithabu by metal-detecting: Dies (1-3), 1 and 2 in the Hiddensee Style, and a mould for a Slavonic-Russian bull-headed pendant (4) measuring 36.4 x 28.6mm. Material: bronze. Date: late tenth-eleventh century

And it is just here that the linking of settlement and harbour could succeed in explaining more precisely how the *emporium* functioned. Hopefully in this way it will be possible to connect the ships' landing places or jetties as postulated by Hoffmann-Wiek and Grön with the system of trackways in the immediate harbour zone.[58]

The integration of data will be one of the main tasks in the future. How successful this strategy can be may be best shown by the identification of that zone north of the stream in the western part of the settlement where the iron smiths were working. The numerous finds of slag permits this allocation, albeit a preliminary one, and this provides clear hints as to the functional arrangement of the settlement. Accordingly the question of new excavations within the settlement itself automatically arises. For 25 years now no digging has taken place in Haithabu. Starting in June 2005, however, purposefully chosen individual structures based on the geophysical survey will be excavated. It is planned that pit dwellings should be to the fore in the excavation programme which is due to last two years initially, these dwellings having not been paid very much attention in the past.[59] Besides the questions of the functional classification and the social differentiation within these buildings, the comparison of those excavations which firmly address the issue of Haithabu's hinterland will move into the foreground. Indeed, in Schuby (Kreis Schleswig-Flensburg) and Kosel (Kreis Rendsburg-Eckernförde) pit dwellings which compare

58 Cf. Nakoinz/Mayr/Paddenberg/Böhm 1999, Abb. 3.

59 For material published on the sunken house features within the semicircular rampart cf. Jankuhn 1933, 346-352; Jankuhn 1986, 93-95, fig. 42.

well with others in the western Baltic were identified.[60] For Haithabu's early phase the pit dwellings of the southern settlement, which have to date been evaluated only in summary fashion, can be used by way of comparison.[61]

Over the space of more than 100 years a sturdy edifice of research has developed in and around Haithabu. This is, on the one hand, prerequisite for every new piece of research. On the other hand, however, it opens far-reaching perspectives such as those arising from large-scale geophysical surveying. Together with the use of efficient geographical information systems and integration with the natural sciences, it will be possible to gain new insights into what was going on at the interface between Scandinavia and the continent and between the North Sea and the Baltic.

(translation: Mandy Loughran)

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60 Meier 1994, 51-74.

61 Steuer 1974, 15-19.

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Agrarian production and the *emporia* of mid Saxon England, ca. AD 650-850

Helena Hamerow

Introduction

Ever since the excavations at Hamwic (Saxon Southampton) – the first Anglo-Saxon *emporium* to be investigated archaeologically – there has been speculation regarding the manner in which such settlements were provisioned, and what economic impact their presence had on agrarian production in the countryside.[1] The following study investigates these questions from two perspectives: first, it considers faunal and botanical evidence from within the *emporia* themselves as indicators of agrarian production in their hinterlands. In practice, this means examining results from the four main *emporia* to have been archaeologically investigated on any scale, namely Hamwic, London, York and Ipswich (Fig. 1). The same questions will then be considered from the perspective of the rural hinterland: is there evidence for intensification, expansion or specialisation of agrarian production in the countryside of late seventh- to ninth-century England and can these changes be connected with the rise of the *emporia*, or, as has recently been argued, were these trading settlements essentially 'divorced from the rural economy'?[2]

The provisioning of the *emporia*

There is ample evidence from the *emporia* to suggest that they were provisioned from the surrounding countryside. The first study to identify such evidence was a pioneering analysis of the animal bones from Hamwic by Jennifer Bourdillon.[3] She noted that most of the meat consumed by the inhabitants of the *emporium* – up to 75 % – was beef, with

1 Hodges 1982. Whether any of the seventh- to ninth-century North European trading settlements loosely termed *emporia* or *wics* merit the term 'town' is a vexed question, although by the eighth century they undoubtedly displayed many urban characteristics. See Scull 1997.

2 Saunders 2001, 13.

3 Bourdillon/Coy 1980; Bourdillon 1988; *idem* 1994.

Fig. 1. Location map showing the main sites mentioned in the text

mutton being somewhat less important, and pork being a relatively minor component. Furthermore, of the sheep and cattle represented in the assemblage, over half were older animals (i.e. with molars in full wear).

Subsequent work on animal bones from other *emporia* has suggested similar patterns. A study by Terry O'Connor of the faunal assemblage from the eighth- to ninth-century *emporium* at York (*Eoforwic*) has revealed that here too mature cattle – i.e. 3-8 years old – provided as much as 80 % of the meat consumed, and that there is virtually no evidence of neonate or very young domesticates. It is thus a classic 'consumer' assemblage and, like Hamwic, the presence of all major body parts indicates that

animals arrived at the *emporium* on the hoof, with the possible exception of pigs, some of which may have arrived as dressed carcasses.[4]

As for Ipswich, little has so far been published concerning the animal bone assemblage, yet the provisional results look rather similar to those from Hamwic and York, with a clear dominance of cattle, around half of which survived beyond the age of four.[5] This emphasis on cattle is of course not entirely restricted to English *emporia*, but is also seen at Ribe and Dorestad, for example.[6] It thus appears that the populations of Hamwic, York and Ipswich had a relatively plentiful supply of meat, but primarily from cattle that were beyond prime market age.

What does this evidence suggest about the way in which the provisioning of these *emporia* operated in practice? The rather monotonous meat diet shared by the occupants of Hamwic, Ipswich and York have led to the suggestion – first put forward by Bourdillon some fifteen years ago – that they were not in direct contact with the producers of meat and that access to meat was in some way constrained since, given a choice, people would not buy the tougher meat from older animals that had experienced a full working life in the countryside.[7] According to this model, the animals reached the *emporia* from surrounding estates – in other words, the *emporia* were provisioned with renders in kind paid to the king.[8] This 'redistributive' model has since been tested by O'Connor against a wider range of faunal data from both wics and non-*wic* settlements, and been reaffirmed.[9] In short, it is argued that the inhabitants of these three *emporia* were inhibited from trading directly with food producers. Further support for this inference comes from the fact that the faunal assemblages from the *emporia* are characterised by a paucity of poultry, wild fowl and, to some extent, pig – precisely the kind of animals that people could relatively easily have obtained for themselves.[10]

When we turn to mid Saxon London (*Lundenwic*), however, a somewhat different picture emerges. The faunal assemblages, like those of Hamwic, Ipswich and York, are characterised by low diversity, with cattle as the dominant meat animal followed by pig and sheep. Animals were likewise brought in on the hoof and butchered in the *emporium* but, crucially, a broader age structure is indicated, including many sub-adult animals,

4 O'Connor 1994, 139. Currie has identified, based on evidence contained in Late Saxon charters, 'one of the main provisioning routes into the *Hamwic*' from a large area of common pasture at North and South Stoneham (Currie 1994, 117). However, while North Stoneham was a royal estate by 932, we cannot be certain that this was already the case in the eighth century, when Hamwic was at its peak.

5 Crabtree/Stevens forthcoming.

6 Hatting 1991**;** Prummel 1983.

7 Bourdillon 1988.

8 *Ibid.*, 188-191; see also Crabtree/Stevens forthcoming.

9 O'Connor 2001.

10 *Ibid.*, 60.

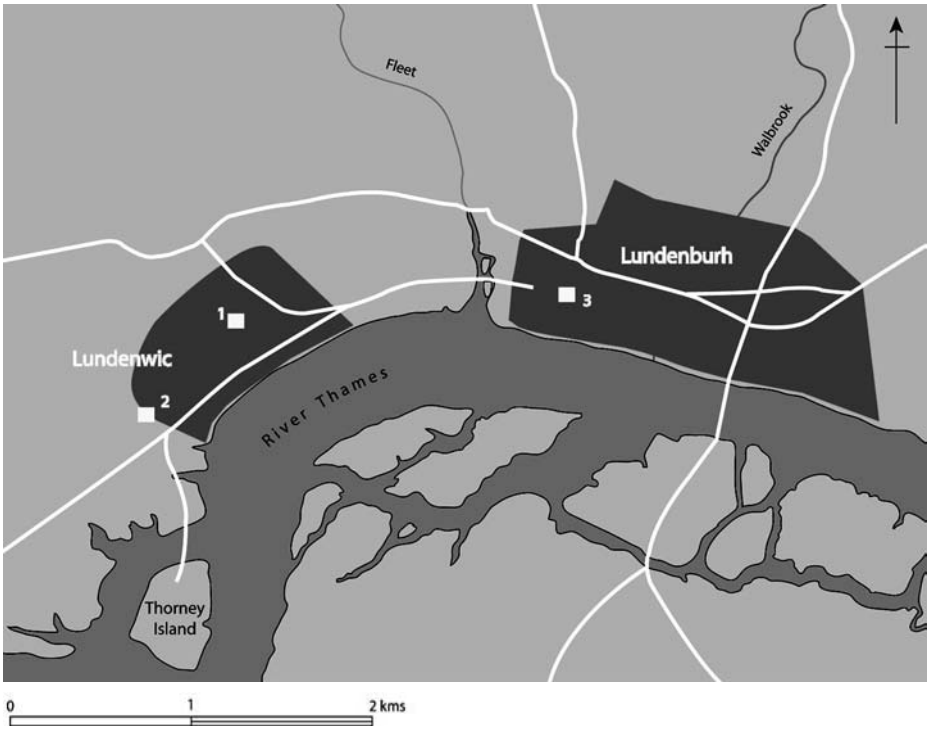

Fig. 2. Lundenwic.
Key: 1. The Royal Opera House; 2. The National Gallery; 3. St Paul's Cathedral

suggesting that these were obtained at market, unlike the ostensibly controlled supplies seen elsewhere.[11]

There is, furthermore, evidence to suggest that at least some of the animals consumed in *Lundenwic* were reared in nearby farms. First, excavations at the Royal Opera House in Covent Garden – i.e. within *Lundenwic* itself – have produced neonate and very young cows, pigs and sheep, suggesting at least some locally reared animals, while faunal remains unearthed at the site of the National Gallery suggest the presence here of a farm at the fringes of the *emporium* (Fig. 2).[12] The site yielded a high proportion – up to 7 % – of newborn and very young calves and lambs.[13] A comparable situation may be indicated for Ipswich, where a mid Saxon farm within a ditched enclosure was identified at the Whitehouse Estate, near good grazing

11 Malcolm/Bowsher/Cowie 2003, 160-161.
12 *Ibid.*, 185.
13 Rackham 1994, 131. The National Gallery site also diverges from the pattern seen elsewhere in that sheep predominated over both cattle and pig.

land on the outskirts of the *emporium* (Fig. 3). This arrangement is reminiscent of the Carolingian *emporium* at Dorestad where, behind the densely packed harbour area, lay a number of farms which could have generated enough surplus protein to provision the traders and craftspeople of the *wic*.[14]

Furthermore, an unpublished report on the animal bones from a ninth-century site at the Treasury in London concludes, based on the age profile of the animals slaughtered and the large quantity of cattle 'waste' bones recovered, that this too was a farm where some slaughter and marketing of dressed meat took place, as well as the rearing of animals for marketing on the hoof.[15] This interpretation has recently been questioned by Cowie, however, who argues that the Treasury site could equally have been a royal vill which both collected and redistributed food renders.[16]

Evidence for the supply of cereals to the *emporia* is far scarcer. The preservation of botanical remains from Hamwic and York was too poor for any significant conclusions to be drawn, although enough plant remains were recovered from excavations within *Lundenwic* to suggest that cleaned or semi-cleaned grain – mainly wheat and barley – was imported from the surrounding countryside.[17] The weed seeds present indicate that the cereals were grown in damp ground, suggesting that they may have come from farmland situated in the river valley.[18] Botanical remains from Ipswich suggest that the *emporium* was in receipt of cleaned, processed grain supplied by farms in the surrounding region, including some on reclaimed heathland as well as boulder clay soils.[19]

Agrarian production in mid Saxon England

What are the implications of these findings for the organisation of farming in the mid Saxon countryside? A consideration of the population sizes of the *emporia* is clearly central to this question: Hamwic is estimated to have contained between 2,000-3,000 people and Ipswich is likely to have been of a similar size (Pl. 19).[20] *Lundenwic*, at its peak, housed between 8,500-13,700;[21] *Eoforwic* was the smallest of the four main *emporia* and is likely to have had a population of around 1,000-1,500. Provisioning

14 Martin/Pendleton 1996 and J. Caruth pers. comm.; Prummel 1983, 248-259.
15 Chaplin 1971, cited in Rackham 1994, 131.
16 Cowie 2004.
17 Rackham 1994, 129.
18 Malcolm/Bowsher/Cowie 2003, 184. It is interesting to note in this connection the discovery of a water mill, dated by dendrochronology to the early eighth-century, at the Saxon monastery of Barking, a few miles downriver from *Lundenwic* (Anon. 1996).
19 Murphy forthcoming.
20 Andrews 1997, 253; Wade pers. comm.
21 Malcolm/Bowsher/Cowie 2003, 193.

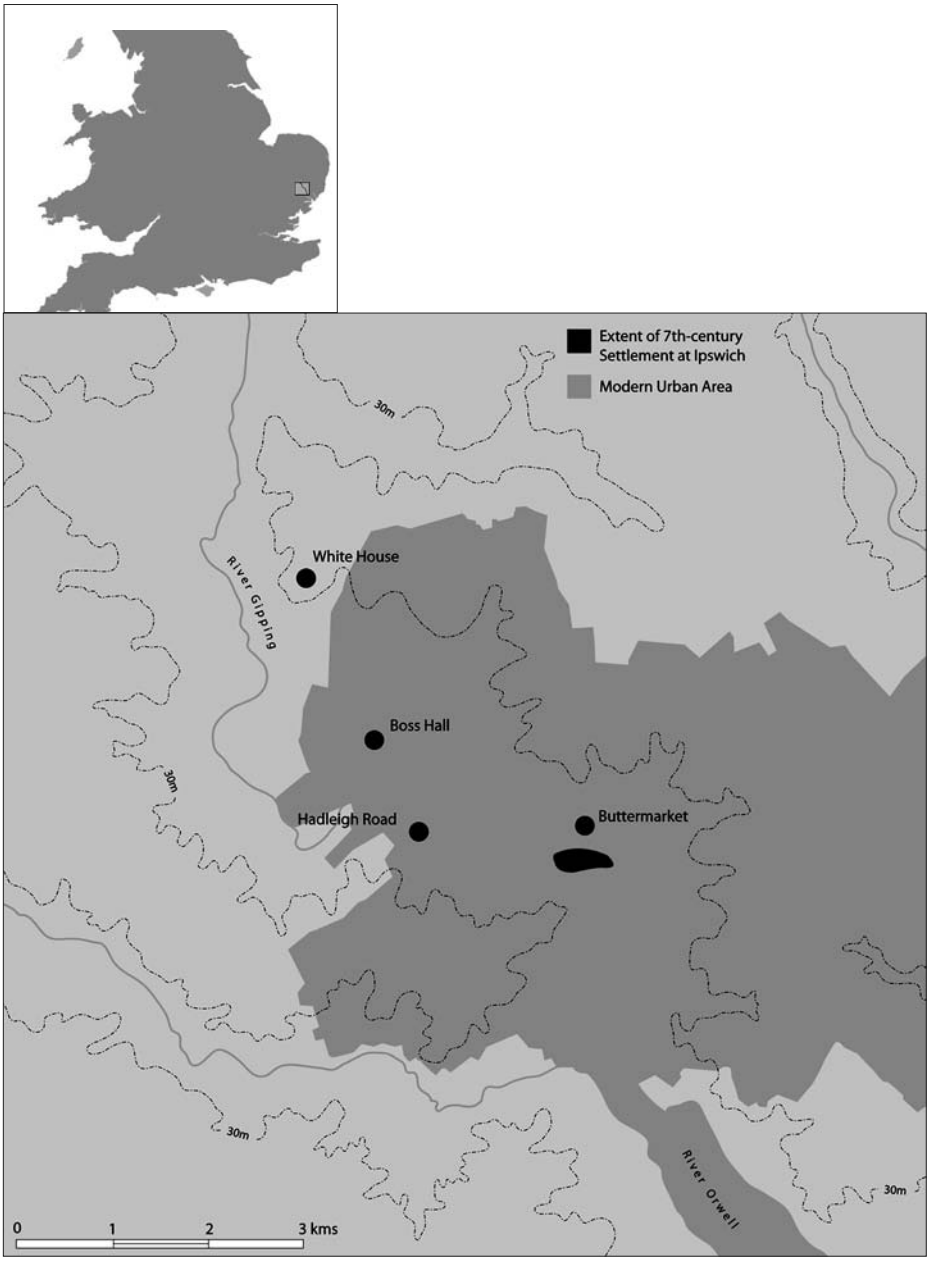

Fig. 3. Mid Saxon Ipswich and surrounding cemeteries/settlements

the occupants of the *emporia* was thus no small matter, especially as the meat being supplied was predominantly beef, and cattle are the most labour-intensive, high-risk of the meat mammals. One might expect, therefore, that the requirement to provision the *emporia* would have had an observable impact on the animal husbandry practices of farming communities in their immediate hinterlands.

Certainly, there are signs that some Anglo-Saxon farmers were modifying their food production strategies during the eighth and ninth centuries, moving away from a diverse regime geared essentially towards self-sufficiency, and towards a more specialized strategy oriented towards emerging markets for meat and wool. The sheep bones from Hamwic itself suggest 'the running of a wether flock for wool' and a 'new and serious emphasis on wool'.[22] Further evidence for specialized livestock rearing has been uncovered at a number of fen-edge settlements in Norfolk; their faunal assemblages suggest that these communities specialized in cattle-rearing, as well as salt production.[23] They lie only a few kilometres from probable monasteries or estate centres at Bawsey and Wormegay; a possible *wic* at Burnham lies 30-40 km away, while the major *wic* at Norwich lay over 50 km distant.[24] Surplus production of beef and hides is also indicated at the mid Saxon settlement at Pennyland in Buckinghamshire, where the age profile of the cattle suggests they were raised primarily for meat: 70 % were slaughtered before the age of three, namely on reaching their full weight.[25] Pennyland, however, lies over 200 km from the nearest major *emporium*. Intensification of animal rearing is also indicated by the fact that the first Anglo-Saxon hay-meadows appear to date to this period as well as the increasing impotance of oats.[26]

The evidence for surplus production of cereals is less clear, however. Bread wheat had replaced barley as the dominant cereal by the ninth century, and this would have required a greater investment of labour in terms of cultivation and manuring in order to obtain the potentially high yields. Intensification of cereal production is also hinted at by evidence for deep cultivation and improved weeding techniques in the eighth and ninth centuries from settlements such as Yarnton (Oxfordshire) and Pennyland.[27]

An indirect yet powerful indication that Anglo-Saxon farmers were producing a regular surplus is the increasingly widespread distribution amongst mid Saxon rural settlements of a number of commodities either produced in, or traded through, the *emporia*. Most notably, there is Ipswich Ware, the first post-Roman pottery type to be

22 Bourdillon 1988, 182.
23 Andrew 1992.
24 Although the *wic* at Norwich may not have been established until c 900 (Hill/Cowie 2001, 99-100).
25 Williams 1993. Changes in the kill patterns of cattle and sheep at a mid Saxon settlement at Quarrington, Lincolnshire, also hint at surplus production (Taylor 2003, 273).
26 Hooke 1998, 133; Hey 2004, 47.
27 Hey 2004, 82; Williams 1993, 171-174.

mass-produced using a turntable (Figs 4 and 5). This was manufactured in Ipswich, primarily from the early eighth to mid-ninth centuries, and provides a rare example of a commodity for which both the production site and distribution have been studied in detail. A kiln and large quantities of potting debris associated with the production of Ipswich Ware have been found in Ipswich itself, while Ipswich Ware is found very widely on settlements within the kingdom of East Anglia, and must have been distributed by an efficient marketing system.[28]

The distribution of quernstones imported from the Rhineland is of particular interest as they relate directly to food processing. A study by Parkhouse indicates that these were widely distributed within mid Saxon England, indeed much more widely than imported pottery.[29] A dump of over 200 fragments of lava querns exported to England as roughouts at the Late Saxon waterfront embankment in London suggests that this material was transported up the Thames, and indeed such querns have been recovered from rural settlements as far upriver as Oxfordshire.[30] By far the most compelling evidence for widespread trade and surplus production in eighth-century England is, however, the impressive spread of *sceatta* coinages, estimated to have numbered in their millions.[31]

The widespread appearance of coins and of relatively low-value bulk imports such as quernstones and pottery in rural settlements of the eighth century reflects the increased access of farmers to an exchange network that ultimately connected them to the *emporia*. The clear eastern focus of the distribution of coinage and imported goods is a further indication that the rural economy was somehow integrated with that of the major *emporia*, which lie near the eastern and southern English coasts. It can hardly be a coincidence, for example, that the eighth century saw a doubling in the size of Ipswich, the establishment of a major pottery industry capable of marketing Ipswich Ware in large quantities throughout East Anglia, and the rapid development of a money economy within the kingdom.[32]

Conclusion

It is nevertheless necessary to look beyond the *emporia* if we are to understand the reorganization of food production in mid Saxon England. The need to provision growing numbers of estate centres and monasteries was increasing sharply in this period. Faunal evidence from the Northumbrian royal vill at Yeavering and high status settlements

28 Scull 1997, 277-278; Wade 1988, 95-96; Blinkhorn 1999.
29 Parkhouse 1997.
30 Freshwater 1996; Hey 2004, 292.
31 Metcalf 1993; *idem* 1994.
32 Scull 2002, 304.

Fig. 4. Ipswich Ware

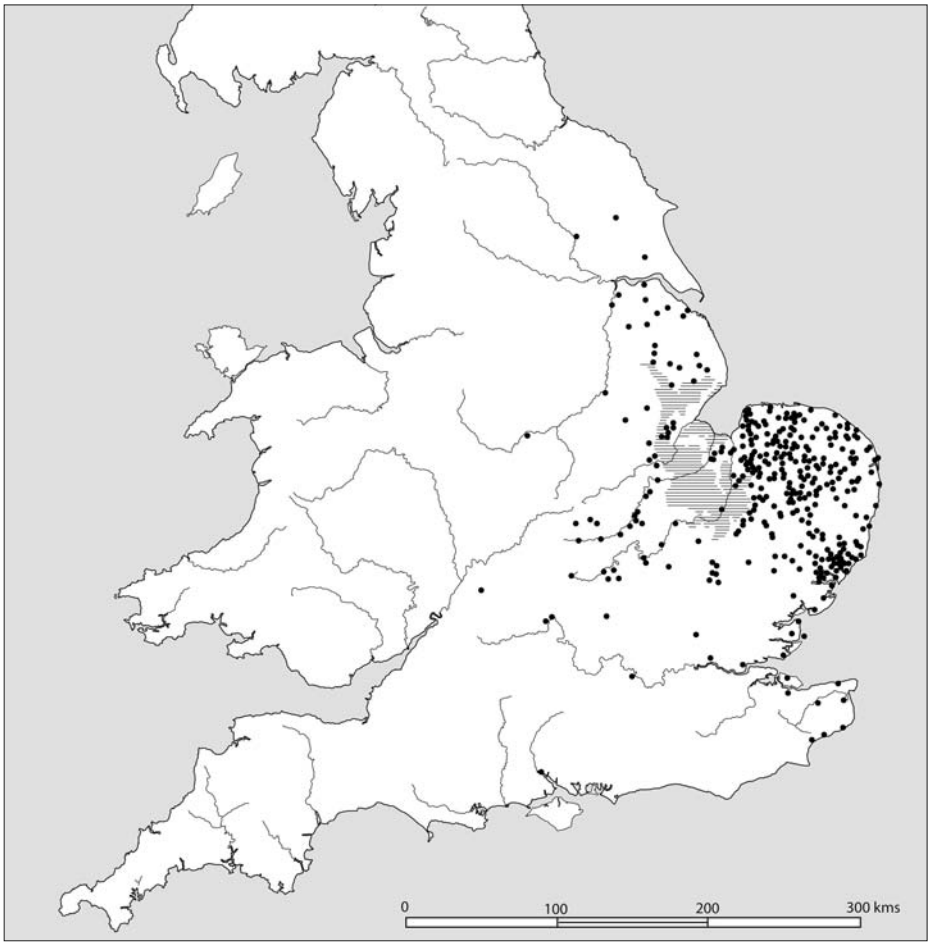

Fig. 5. Distribution of Ipswich Ware

such as Flixborough (Lincolnshire), Eynsham (Oxfordshire) and Wicken Bonhunt (Essex) support written sources that describe how religious and aristocratic communities drew upon a system of tribute that involved the movement of agricultural produce and livestock around the countryside.[33] Indeed, the cattle herds associated with some monastic estates must have been enormous, to judge from the scale of manuscript production; on one recent estimate, some 1,500 acres of pasture would have been necessary to sustain a herd large enough to produce enough skins for one gospel book of the size of the Lindisfarne Gospels per year.[34] These communities would certainly have been in direct contact with meat producers. Furthermore, recent work on the distribution of so-called 'productive sites', which yield significant quantities of coinage and metalwork, has revealed a thriving network of inland regional markets in this period, whose chief commodities must have been agricultural produce.[35] It is probably safe to assume, furthermore, that the intensification, specialisation and almost certainly expansion of agrarian production seen in this period sprang not only from the requirements of so-called 'consumer communities' like those mentioned above, but also from a general increase in population, although direct evidence for this is bound to be elusive.

Saunders has recently argued that kings established the *emporia* in order to control the exchange of 'prestige goods' – a system on which their power fundamentally depended.[36] He believes that they were essentially 'specialized centres for the regulation of prestige goods, such as precious metals and decorated metalwork, high quality ceramic tableware and wine', economically quite separate from rural production, and therefore not the forerunners of medieval market towns.[37] The animal bone evidence plays a key role in his argument. Yet it is salutary to note that the slaughter patterns seen at the Anglo-Saxon *emporia* are not very different from those of twelfth- and thirteenth-century towns where older animals also predominate and where 'many of the cattle eaten … may have served several years as plough beasts before being fattened up for the table'.[38] We should not, therefore, rule out the possibility that many, perhaps most, of the cattle consumed in the *emporia* in fact represent locally marketed produce and were simply the by-products of arable and dairy farming, as in later medieval towns.[39]

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33 Faith 1999; Faith in: Banham/Faith forthcoming; Loveluck 2001; Hardy/Dodd/Keevill 2003; Wade 1980. There is some debate about the exact status of Wicken Bonhunt. It appears either to have been a royal centre where food rent was collected (cf. Hodges 1982, 142), or a farm that specialised in pig rearing (Crabtree 1996, 63).

34 Härke 1999. For a consideration of the cost of maintaining a mid Saxon monastery, see Campbell 2003, 17-18.

35 Ulmschneider/Pestell 2003.

36 Saunders 2001.

37 *Ibid.*, 11-12.

38 Grant 1988, 156. See also Albarella 2005.

39 The potentially important role played by petty producers marketing their surplus animals is stressed by Faith (in Banham/Faith forthcoming).

While it may be true that the *emporia* were not 'nodal points in the rural economy',[40] the combined weight of the evidence of Ipswich Ware, continental quernstones and *sceatta* coinages indicates that the economies of the *emporia* must have been in some way bound up with those of rural producers, even if the precise economic mechanism that linked the traders of the *emporia* with peasant farmers toiling in their hinterlands remains ill-defined.[41] The difficulty of defining this link is inevitable given that evidence for agricultural production remains patchy at best and that most of the objects manufactured in the *emporia*, such as antler combs and simple brooches, are not sufficiently distinctive to enable their provenance to be established if found in a rural context.[42] Yet the 'R' series of sceattas, minted in Ipswich, also circulated in significant numbers within its immediate hinterland and beyond, leading Scull to postulate that the *emporium* 'was linked to its hinterland through markets with a significant element of monetary exchange' (Fig. 5).[43]

While the animal bone evidence may point to a form of 'command economy' for some of the *emporia* – most clearly for Hamwic – it also suggests that the economic relationship between *emporia* and their hinterlands varied. The apparent differences in provisioning seen at *Lundenwic* may hint at different structures of landholding in the surrounding region compared with the other three *emporia*; a system, perhaps, in which some meat was specially produced on royal farms, or *tuns*, for consumption in the *emporium*.

Despite the relatively large populations of the major *emporia*, we must bear in mind the possibility that they were provisioned in part by means of a system of royal tribute, as Saunders has argued, and as a result had relatively little impact on farming practices in their hinterlands. Yet it seems highly unlikely that the *emporia* were entirely divorced from the rural economy. The faunal evidence from London and the widespread circulation of low-value imports and *sceatta* coinages challenges the assertion that 'no specialized processes … [linked] the *emporia* to the countryside'[44].

One thing at least is clear: what is needed are targeted studies of botanical and faunal assemblages from settlements near the major *emporia*, informed from the outset by the kinds of questions outlined above.[45] Only through primary research of this kind

40 Saunders 2001.

41 Cf. Scull 2002, 309.

42 Hinton 1996, 99.

43 Scull 2002, 309. This contrasts however with the highly restricted distribution of certain of the series 'H' sceattas, which were minted at, and almost entirely restricted to, Hamwic (Andrews/Metcalf 1997, 212).

44 Saunders 2001, 13.

45 This may be more difficult than it sounds, however. Efforts to identify mid Saxon settlements within a 5 km radius of Hamwic have proven largely fruitless (A. Morton pers. comm.; Brisbane 1988, 107). Thus large-scale excavations 4 km to the north of Hamwic uncovered evidence for farming and/or settlement from late prehistory through to the fourteenth century, but none for the early and mid Saxon periods (Crockett 1996).

will we be able to understand the economic relationship between the *emporia* and the communities in their hinterlands.

Acknowledgements

I am grateful to the following for providing access to unpublished or forthcoming reports: Jo Caruth, Pam Crabtree, Keith Wade and Peter Murphy. John Newman, Alan Morton, Duncan Brown helpfully provided access to illustrative material. I am particularly grateful to Terry O'Connor, Umberto Albarella and Ros Faith for their comments on an early draft of this paper – the final version has benefited greatly from their insights and suggestions. Finally, I should like to extend special thanks to Joachim Henning for providing a stimulating international forum in which to present the ideas contained in this paper.

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Urbanisation in Northern and Eastern Europe, ca. AD 700-1100

Johan Callmer

1. Introduction

The idea of urbanism being a global category, the kernel of which is of a social and cultural character, is fundamental to the following study. The economical system or systems involved are only secondary to the social and cultural patterns. Urban centres of different periods and regions have very different backgrounds and are only conditionally compatible. The urban centres as historical phenomena, however, are often linked together in chains of continuity and tradition. This does of course not exclude change from an earlier period to a later one. This is rather the rule and stability is a rare phenomenon. Although deplorable, the possibility of following the individual as a protagonist in this development (so strongly propagated by post-processualists) is only given as a rare exception. When working with the archaeological material, it is often necessary to accept the concept of acting groups, e.g. "elites", "the church", "merchants" etc. – only by using one's own imagination is it possible to come near the individual experience in the past.

Situated at a considerable distance from the Ancient Roman frontier, the development of urbanism in Northern and Eastern Europe in the early and high Middle Ages has only an indirect and no direct connection with patterns of urbanism of the Mediterranean tradition. This said, it is of consequence to stress that this indirect connection should not be underestimated. The elites of the period probably had some notion of the urban component of the past and present Mediterranean cultural tradition by way of stories, legends and myths. With increasing contacts with the cognitive network of the Christian Church from the ninth century in Northern Europe, and only slightly later in Eastern Europe, the urban model became much better known not only in the form of celestial Jerusalem, but also in a more concrete way. The considerable mobility of aggressive groups from North European societies, including many representatives of the social elite also contributed substantially to this cognitive transfer.

Initially, the development of urbanism in Northern and Eastern Europe have several traits in common, whereas the later phase shows a much larger differentiation. These

differences make it necessary to treat the urbanisation in Northern and Eastern Europe in two different parts. Since the process in these two divisions of Europe is intrinsically so closely related, there will be need to compare with and to refer to the development in the other part. It must be stressed that although the period extends into the high Middle Ages, the number of highly reliable historical sources is slight. A small number of written sources provide very essential material and information without which we would have more or less been forced to accept pre-historical conditions. A number of additional literary sources are available, but the quality of the information is in many cases dubious. This means that reconstructions are mainly based on archaeological and numismatic sources. The presence of the reliable written sources however allow us to refine our interpretations. It is thus possible to reconstruct a historical development of considerable complexity, although it must be accepted that the details of what happened and, as already remarked, the fate of the individuals involved must often remain fogged.

Urban archaeology in Northern and Eastern Europe fifty years ago was still little advanced and the vast majority of relevant archaeological sources have been secured during the last twenty-five years. With the insufficient praxis of archaeology, this often means that the relevant material partly remains only provisionally and very succinctly published, if accessible at all. Urban archaeology is continuously adding to this corpus of sources and the quality of the excavation has developed very positively. There are, however, many awkward gaps in our standard of knowledge and urban archaeology, considering its great importance, would profit from more targeted and international research initiatives, including excavations.

Criteria for the concept "urban centre" in Northern and Eastern Europe in the early and high medieval periods have been discussed both by historians and archaeologists. The choice of criteria has of course been highly influenced by the discipline to which the scholar belonged and by the philosophical and political basis from which the problems are approached. The pressures of ideology and societal conformism has for long periods biased the approach to the study of medieval urbanism in a non-productive way, especially within the Soviet state, but research in Northern Europe cannot completely escape criticism for harbouring a certain narrowness and rigidity. On one side there are the formalists who cannot free themselves from the legal aspect and have difficulties to accept the existence of urban centres without a special legal status or the case that there is no written source to prove it. On the other side are those who see an urban centre as soon as there appear any traces of specialised production or trade.

Given the special source situation, priority for the substantial archaeological criteria must be acceded. Historical information, however, is crucial for how these criteria are chosen and how they are structured in relation to each other. A medieval urban centre like the majority of other urban units in other parts of the world and from other times can only be defined in contrast to its surrounding countryside. The urban centre

will always occupy a superior position among the settlements in a region. This otherness is expressed both in quantitative and qualitative terms. The urban centre is generally a much bigger unit than the rural settlements; the density of settlement is also higher. These criteria are very useful and operative in archaeological analysis, whereas their relevance in connection with historical sources is almost nil. The terminology of the sources is often difficult to interpret in these concrete terms. The crucial criteria are however not these indices of relative size and density, but the qualitative properties. Basic are the concepts 'high diversity' and 'high level of information flow'. Also, these qualitative properties must always be realised in comparison with conditions in the surrounding settlements. And finally, these criteria are very often extremely difficult for the historian to adopt. The urban centre must have a relation to the surrounding settlements in terms of administration and control, or in terms of economy and specialised production, or in terms of a combination of these. For an urban centre, these criteria are not enough, since the idea and the meaning of the individual urban centre is its being part of a network of other urban centres. Trade and exchange are important means to maintain these networks and they are often also the rationality of them. These networks could also be part of a political power network. This is highly relevant in both Northern and Eastern Europe.

The essence of these criteria is the development of an urban lifestyle. Being a non-material matter this cannot be directly deduced from the sources but must partly remain a creation of the imaginative mind of the scholar. Trying however to define some characteristics of an urban lifestyle, we are back with the diversity in social, ethnic, sometimes religious terms, and cognitive patterns of high complexity (administrative and organisational, wide and deep competence in production and distribution and knowledge and often experience of other urban centres). The lifestyle(s) result in action in a dynamic relationship between the individual and society, the traces of which are partly visible in the archaeological record. Dynamic change is probably one of the more relevant characteristics of urban centres and, especially, of the medieval urban centre. Instability is consequently, as already stressed, a central concept.

Diversity means also that there were several different groups of the population with different interests. These factors result in a specific urban milieu. A classic conflict in the discussion on urbanism in the early and high Middle Ages is the one between scholars who stress the political and administrative side of urbanism and those seeing urbanism as closely connected with long-distance trade. This has sometimes been understood as a gradual development from administrated and controlled activities to an emancipation and the emergence of "real" burghers. This view is strongly evolutionist and also most unlikely. It is to be preferred to admit that similar phenomena can be dominant at different times and that some interests exist parallel to each other. Thus ambitions to control and regulate activities do not necessarily mean that artisans and especially merchants were without influence. For the long-term existence of the urban centre as a special social unit a certain balance between different groups was necessary. Crisis

arises when one interest group tries to dominate completely. Unfortunately, literature dealing with both Northern and Eastern Europe is rare.[1]

2. Early urbanism in Northern Europe

The idea of the political and economical centre was probably already brought to Northern Europe before the collapse of the Roman Empire. We know very little about centres in Barbaricum in the Roman period, but according to Ptolemy there were some named important places also beyond the Roman frontier. There is unfortunately no archaeological material to really show what these looked like. This is however not surprising, given the very low standard of settlement excavations in Central Europe until recently. The idea of a residence in an agglomerated settlement with control of the surrounding country and with the potential to attract agents of trade and skilled artisans was probably widely propagated in large parts of Western, Northern and Central Europe in the fourth century AD. There are two important sites in Northern Europe, only revealed in the last two decades of the twentieth century, showing the essential traits of a centre of this type. At Gudme on the eastern side of the island of Funen in Denmark, a very large settlement (40 ha) has been documented and partly excavated, uncovering an immense ceremonial hall (more than 50 m long) and with very rich find material including many imports and evidence of high quality metallurgy.[2] The settlement is the centre in a settled region and has a harbour on the coast nearby. Gudme has its apogee in the fourth to sixth centuries AD and there is much to support that Gudme was a place of considerable importance in the pre-Christian religion of southern Scandinavia. Later its importance rapidly eroded.

The other example has been studied at Uppåkra in the southernmost part of Sweden, close to the Sound. The characteristics are in general similar to those at Gudme. The site may have been even bigger than Gudme and is the centre of an even larger region. The find material is of high quality, although there are some differences as a consequence of the application of different research methods. The hall(s?) has not yet been found at Uppåkra but a remarkable cult house or shrine instead.[3] What is most interesting at Uppåkra is the strong continuity from the early Roman iron age to the late tenth century.

In Northern Europe there are only another three sites, which could be discussed in connection with Gudme and Uppåkra. The first is Sorte Muld at Svaneke on the

1 Cf. Jankuhn/Schlesinger/Steuer 1974, Clarke/Ambrosiani1991, Urbanczyk ed.1994.
2 Thrane 1987.
3 Larsson 2003.

island of Bornholm.[4] This site is also huge and the find material impressive, with strong indications of a religious significance. Continuity here is secured from the migration period to the beginning of the ninth century. Excavations have been very limited at Sorte Muld. The second is Helgö, situated in Lake Mälaren only ca. 20 km to the west of Stockholm.[5] In the early Middle Ages this tremendous lake was a bay of the Baltic. Helgö has high quality specialised production (especially metal working) and a hall, but one of relatively small dimensions. Obviously the site lacks the relative superiority in size in relation to the surrounding "ordinary" settlements. The place name may indicate a connection to pre-Christian cult. The continuity at Helgö is problematic, especially for the seventh century, whereas both the sixth and eighth centuries are covered. The third site is Old Uppsala, situated just outside the modern city of the same name (Uppsala) in central eastern Sweden.[6] There a large and complex settlement, much larger than the local average has been identified. The impressive cemetery data from the place strongly corroborate the settlement data. Unfortunately, the excavations at Old Uppsala have been very restricted. The quality of the find material is however high. Continuity from the late Roman period to the twelfth century is certain and the religious significance of the site is well documented.

Of the examples discussed here, only Helgö is difficult to accept into this category of huge and rather stable central settlements with a residence, political and religious functions, together with connections to trade and exchange networks, especially as a consequence of its problematic continuity and small size. The centres discussed here were certainly not the only ones in Northern Europe and the discovery of additional centres is to be expected. Especially a successor to Gudme somewhere in southern or central Jutland is likely to have existed.

These sites, all of which probably have a predominantly agrarian component, of course have only faint secondary if not tertiary connections with the urbanism of the Mediterranean. It is, however, difficult to completely exclude this link from the discussion. As stated above, it is most likely that ideas of urban centres were circulating in the Barbarian north. It has been difficult to discuss these centres in sociological and anthropological terms. A research tradition, which has seen urban culture and urban lifestyle in Northern Europe as something exclusive to the eleventh and later centuries, has not been able to accept the obvious elements of urban society at these centres. Especially the example of Uppåkra has actualised the connection between a centre of this type and a medieval town. The centres have been interpreted as a special form of settlement without backward or forward links. Our problem with these centres is not the lack of elements of urban society and lifestyle: Diversity and access to information are there. The question is concerned with the only very feeble traces of a specific urban culture. It

4 Watt 1991.
5 Excavations at Helgö 1961 ff.
6 Duczko 1996.

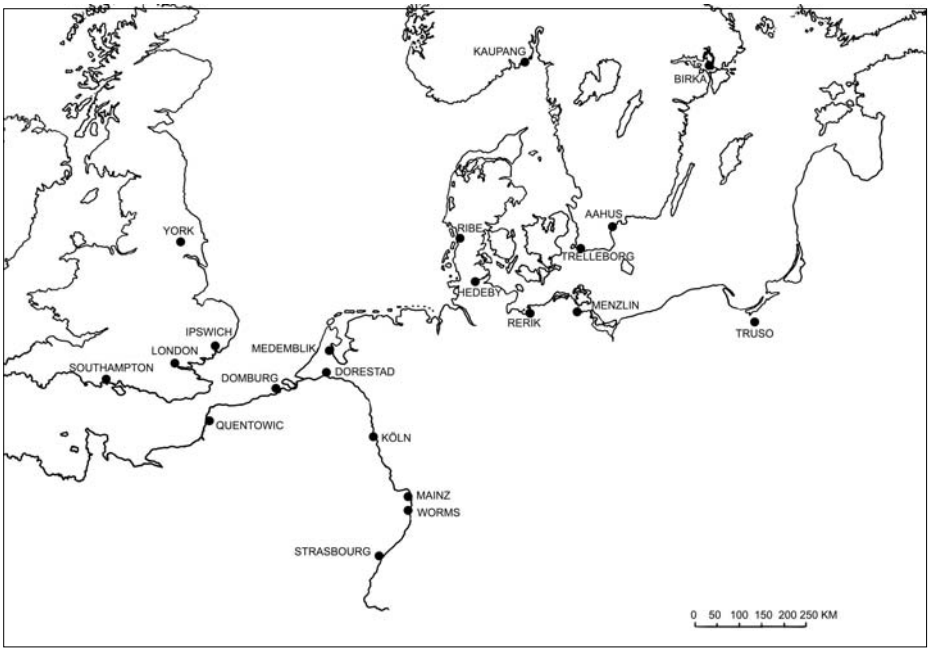

Fig. 1. Important early *emporia* of North-Western and Northern Europe (including some associated centres along the Rhine)

should also be noted that these large centres are closely connected with similar lower-level regional centres of smaller size. A considerable number of these smaller centres and residences of the top local elites is known.

Another urban model is introduced into Northern Europe with the *emporia* of the late Merovingian and Carolingian period (Fig. 1).[7] These often very extensive agglomerated centres developed in the English Channel area and on the western and southern shores of the North Sea. Although certainly possessing individual conspicuous profiles, the *emporia* of Hamwic, London, Ipswich, York, Quentowic, Domburg, Dorestad and Medemblik share enough characteristics to form a distinctive group of large urban centres without direct precedents in the Roman period. However, they belonged to a specific network also directly involving a number of centres on the Rhine with Roman roots, including Cologne, Mainz, Worms, Strasbourg and possibly others.[8] There are different views on the emergence of the *emporia*. Some understand them as creations of local elites, others, however, stress their central places in networks which the elites of those days never could hope to organise and much less to control. In that case merchant

7 Cf. Hodges 1982; Hill/Cowie 2001.
8 Most recently Ellmers 1984.

traders in the more lucrative businesses of the early Middle Ages must have played a decisive role. In addition to this general north-south network, which also was linked to the Mediterranean, another branch led north-east and east to Northern Europe. On the west coast of Jutland, the *emporium* of Ribe developed from an early start in the eighth century.[9] However, even in the early eighth century the *terminus* for the *emporium* was not at Ribe. Places which in the run of this development changed from non-permanent beach markets to permanently inhabited trading centres have been identified at Grosströmkendorf on the coast of Mecklenburg[10] and at Åhus on the east coast of Scania.[11] It is also the period in which the much better known centres of Hedeby[12] and Birka,[13] both of *emporium* type, started to grow from humble roots in the second half of the eighth century. Although considerably smaller, Kaupang in the Oslo Fjord region of Norway has a comparable development.[14] In southern Scandinavia and on the southern coast of the Baltic we find an intriguing number of roughly comparable *emporium*-like trading centres with their beginnings in the later part of the eighth century, which after rapid growth eclipse circa a 100 years later. The speed with which the *emporium* network was established should be appreciated. Within one generation the main communicative links of the network were functioning. Attempts at seeing a long, gradual development are not convincing.

The *emporia* in Northern Europe (Fig. 2) are mostly found in fertile and relatively densely populated areas, which could produce the necessary surplus of foodstuffs. The early Hedeby could however be an exception, but further research on the capacity of its hinterland is necessary. All sites have direct access to navigable water, thus making them differ from the political centre type of Gudme and Uppåkra. Most sites are huge, soon covering more than 10 ha. Considerable parts are densely built with a certain regularity, indicating plots, and with streets or roads running parallel to the waterfront. Smaller houses and only occasionally hall buildings of the regional farmhouse type occupy the plots (Fig. 3). On dry sites, sunken-featured buildings are numerous. Large amounts of production waste indicate that craft production was important. Serial production of jewellery (silver, bronze and glass), tools, possibly weapons, textiles and combs is certified in the usual find material. Additional products like shoes and iron cauldrons may also be considered, although yet little known. The distribution of the find material suggests that several crafts were executed on the same plot. Some production units probably specialised in the production of entire dresses with accessories. The *emporia* were of course not only production centres but also places of trade and exchange.

9 Ribe excavations 1970-76.
10 Wietrzichowski 1993.
11 Callmer 1994.
12 Jankuhn 1984.
13 Ambrosiani 1990.
14 Blindheim 1975.

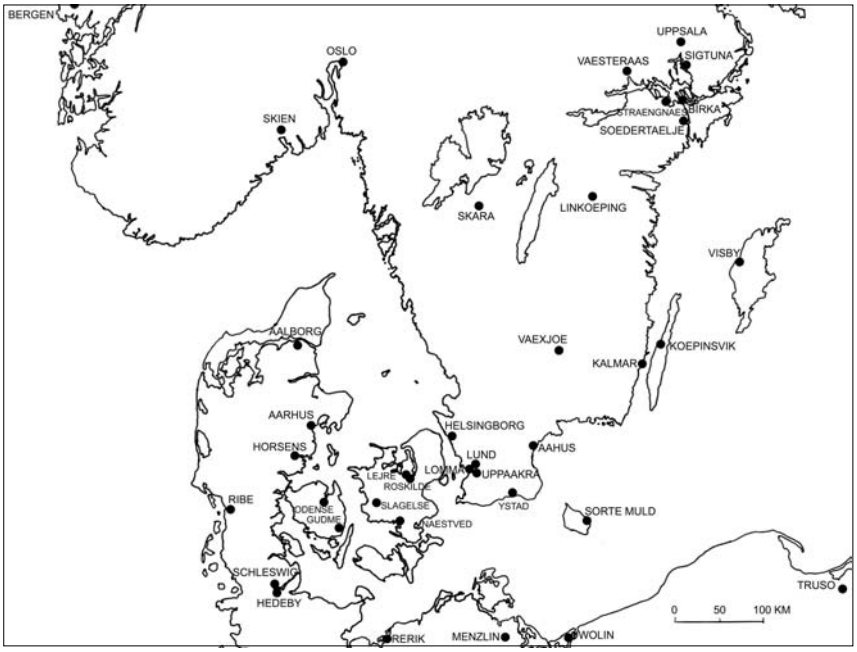

Fig. 2. Northern Europe. Early pre-urban and urban sites

We have to recognise that there was both an internal trade in Northern Europe and an external one reaching out beyond. Valuable products going out from Northern Europe were mainly furs and slaves, with amber also playing an important role. To what extent other products like iron were traded outside Northern Europe remains unclear. Inside Northern Europe iron was certainly traded, as large regions virtually lacked local access to this commodity. From outside of Northern Europe non-ferrous metals, glass, certain high quality textiles and weapons were imported. Salt, spices and wine, as well as some exclusive foodstuffs were also important.

The relationship between the emporia and local political power structures and elites is a key question for their understanding. The *emporia* of Western Europe were certainly connected with political elites and the tithes exacted from the *emporia* provided a very important part of the income for these kings and other grandees. This however does not mean that we can see the political elites as the initiators and active operators of the *emporia*. Their role was rather one of passive profiteers. The possibilities of control were limited. This leaves us with the leading groups of the traders and organisers of shipping. As active agents at the *emporia* they could fully appreciate the importance of the complex network. We must also remember that the *emporia* of Northern Europe exist alongside the political centres, which share a number of characteristics with the *emporia* (e.g. some specialised production) but have another

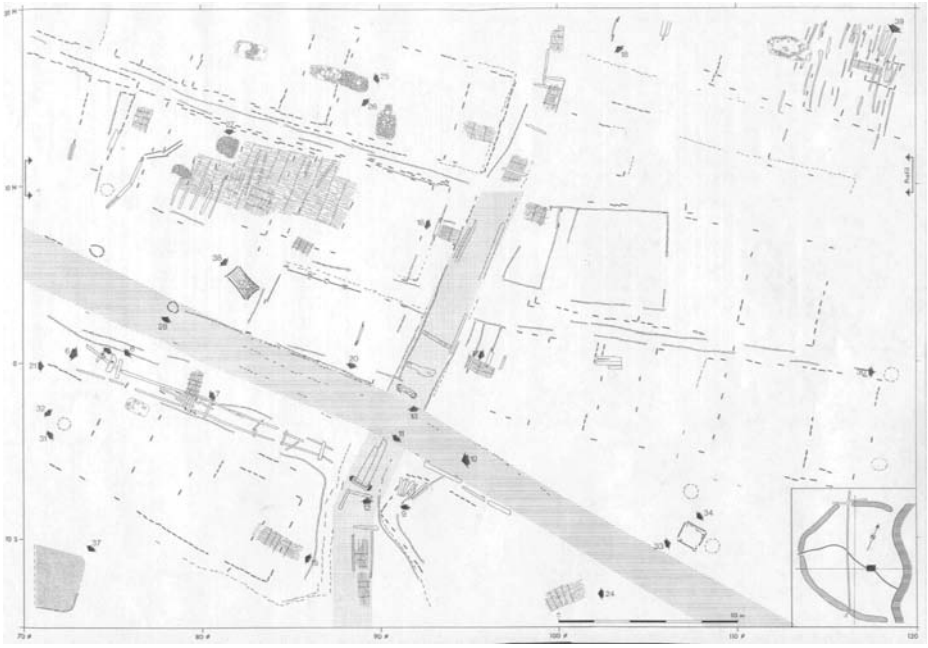

Fig. 3. Densely structured settlement at Hedeby (ninth century)

topography and general interior structure. The close connection between the *emporia* is of a different character. The revenues collected by the elites were just mentioned and these guaranteed a certain security, yet what little we know from written sources rather indicates that the inhabitants sometimes had to fend for themselves. Close contacts with the political elites were, however, also essential, while only they could deliver certain products in desired amount including some foodstuffs. Consequently, a balanced mutual relationship between agents of trade and local elites is likely. Too strong pressure on the agents of trade by the elite would induce the departure of the former group and their establishment elsewhere. Thus, the elites would collect as much as they could but could never go too far. However, it is again important to stress the network character of the *emporia* and the routes between these nodal points. The failure of one of links would cripple the system and the breakdown of several would destroy the network completely. The culture of these *emporia* in Northern Europe is mainly Scandinavian. Some artefacts, house-building techniques, burial customs etc. are seldom encountered outside the *emporia*. A complete openness and acceptance can for instance be observed in the use of pottery. These observations hardly allow us to maintain that the inhabitants of the *emporia* were necessarily ethnic Scandinavians. Most interesting is this question in regions where the population was non-Scandinavian, as on the southern coast of the Baltic. The cultural pattern rather than being of ethnic character comprised those active

in the trade network. Myths and tales together with necessary political and economical information from near and far also circulated in the network. It is not unlikely that the background for the revision of the runic alphabet and the intensification of the use of runes in the eighth century is related to the development of the network of *emporia* in Scandinavia. The network was also of great importance for the transfer of Christianity. Small Christian communities certainly existed in some of the *emporia*. It is no coincidence that three of the four earliest dioceses in Denmark were located at nodal points of the *emporium* network.

The *emporia* in Northern Europe for which we have sufficient data to discuss trends in the development started off as only relatively small establishments. Among the earliest examples in the eighth century, both Ribe and Åhus begin as non-permanently occupied trading sites. Only ca. two generations later they were permanently settled. The early phase at Ribe with an artificially raised bank for the traders suggests direct transfer of ideas and models from Frisia (e.g. Medemblik). In the second half of the eighth century and in the first half of the ninth century (for ca. 100 years) the *emporia* reach their zenith. During this period the number of relevant sites is the highest. At least a dozen examples are known and further research is likely to add another few. Many of the examples have a surface extension of no less than 12-14 ha. Calculating the population by the surface extension of the settlement we arrive at numbers between 500 and 1000 persons; in a few cases these numbers must have been even higher. The population of the *emporia* may have fluctuated with the seasons. Some northern outposts may have been visited mostly in summer and some of the south-western *emporia* may have had a corresponding number of winter guests. The population numbers should then be compared with local agricultural settlement agglomerations seldom possessing over 100 inhabitants and mostly well below fifty. The size of the *emporium* population induces the question of organisation. There is little to suggest a markedly hierarchical organisation, thus making the co-operative organisation model more likely. The population concentration also meant that the local community could muster a considerable defensive force in almost no time. The local political power certainly had representatives at the *emporia* and owned property there, how much power they actually had remains unclear and is here rated low due to the motivation above. Some of the *emporia* had defensive works or access to nearby fortifications. This does, however, not seem to be a characteristic of the early phase.

A decline in the number of *emporia* can be noted for the second half of the ninth century. Hedeby, Ribe, Ystad, Birka, Wolin and Wiskiauten certainly continue their existence. A closely related site like Aarhus also shows continuity. The near circumstances of this decline cannot be satisfactory clarified for lack of sources. We may however contend that the *emporia* in North-western Europe show a similar trend. Scandinavian pirates recurrently attacked the majority of the *emporia* with devastating effects. There is good reason to consider a similar crisis in the Baltic in the sixties and

seventies of the ninth century. The most negative effects were those on the network itself. This may be one of the reasons why the western connections of Northern Europe become less pronounced and the eastern connections seem to dominate. This is however partly a *trompe l'oeil*. For example, the very significant import of non-ferrous metals from the west obviously continued without serious problems.

In the tenth century Hedeby and Birka certainly show no signs of quantitative decline. However, they change considerably qualitatively: Both become fortified, although the fortification at Hedeby must be viewed differently from that of Birka. In the second half of the tenth century, the wall of Hedeby became part of the fortified southern frontier of the Danish kingdom. Warrior graves, virtually unknown from the ninth century, turn up both at Birka and at Hedeby. Other tenth century sites on the Scandinavian peninsula and in Denmark are little known. On the southern coast of the Baltic, Wolin,[15] which until the middle of the ninth century had played only a limited role, establishes itself as the major *emporium* after the decline of places further west on the coast, sometimes already much earlier. In the Vistula delta, Truso seems to decline although it does not completely collapse.[16] In contrast, on the northern side of the Sambian peninsula the trading site at Wiskiauten[17] with roots in the first half of the ninth century seems to have a strong development. This site is even more favourably situated with reference to the access to amber, the number one commodity of the south-eastern coast of the Baltic. This status of the network of *emporia* in Northern Europe then remains rather unchanged until well into the second half of the tenth century.

A highly remarkable and indeed conspicuous change, which has influenced the whole network with the remaining *emporia* in Scandinavia and perhaps also the political centres, falls in the 970s. The whole production milieu of the *emporia*, which was essentially erected in the eighth century, collapses. The production of the vast majority of typical Viking age artefacts is suddenly discontinued. This is also the time of the abandonment or at least strong reduction of activities at Birka (but hardly a complete break of continuity). Unfortunately, the status of the top levels at Birka does not admit a detailed evaluation of its final phase. It is, however, likely that the old network was seriously shattered and its agents critically disturbed. The network was not anymore capable of fully maintaining its old activities in production, distribution and the keeping-open of trade routes. The central question what happened in terms of a historical course of events cannot be fully answered. It must be put as a hypothesis, but a stronger pressure and intensified collection of profits could have been a characteristic of the tenth century development and a breaking point may have been reached in the 970s or slightly later. There are, as we shall see, several other factors, which we may assume influenced the development of a new phase of urbanism. To complicate the

15 Filipowiak 1988.
16 Jogodzinski/Kasprzycka 1991.
17 Kulakov 1989.

whole question even more, we must stress that some old political centres still existed alongside the *emporia*, like Uppåkra in Scania, and that not all *emporia* were in serious trouble like Hedeby, Ribe and Wolin.

During the tenth century, the political success of the Saxon kings to hold together the German kingdom and the contemporary success story of the kings of Wessex bringing major parts of England under control presented influential models for external political expansion and internal reorganisation. In both these exemplary developments of royal political power urbanisation played an important role. Urban centres were thought to be important for the state administration and the church, sometimes already before the designs of the kings had materialised, established itself at important places in an urban network. In archaeological literature the importance of the English model has been stressed, but in my opinion the Continental influence was equally relevant. Under completely different conditions, a related model had developed in Eastern Europe within the Rus' territory. The Rus' political entity was structured from the very beginning as a network with centres and strongholds for dominion, exploitation and control.

In the late tenth century and the beginning of the eleventh century there is a strong trend to copy these models and to reform old dominions and to build bigger and more integrated states all over Scandinavia. Christianisation and close co-operation with the Roman Church is central to this process and so is urbanism. As already pointed out in many influential studies, both archaeological and historical, this phase of urbanism has been understood as the primary urban phase denying the urban qualities of the *emporia* and the big political centres of Northern Europe of the preceding centuries. This could only be correct with a very narrow definition of urban society. As we shall see, the urban character of some of the new centres has a low level of reality. In some cases it is more the wish for urban status than real preconditions and developed urban characteristics. The likeness between different centres of the late tenth and the eleventh centuries is limited. Comparison is also made very difficult through different levels of studies and evaluations. The following four types of urban centres can be recognised:

1. Large centres (> 10 ha) mainly continuing the style of the political centres of the earlier centuries. The king or a local lord dominates them with his dignitaries, retainers and servants. The church has often chooses these places as diocesan seats with corresponding church(es) and secular buildings. Part of the population is rural, but in our opinion it is likely that both traders and craftsmen are also represented. Craftsmen may be partly itinerant. These large centres are often situated at a distance from the coast.

2. Large centres continuing the style of the *emporia*. Rows of ship landings form a characteristic element. Streets run parallel to the waterfront. Trade and communication are important. Urban centres with the traditional elements of trade and craft production may also include new elements like those connected with the presence of the king or a local lord. Here also the church is represented.

3. Small-sized centres (< 10 ha) with diffuse urban elements and mainly based on the king's administration, on that of the church or both. They seldom have a direct link back to an earlier centre.

4. Small-sized centres with urban elements (trade and craft production). Connection to king, local lord or church. Weak links further back than the tenth century.

The two best-studied examples of the political centre (type 1) with a strong presence of the king and his followers as well as the church, are Roskilde on Zealand[18] and Lund in Scania (southernmost Sweden).[19] The urbanisation process already begins in the last decade of the tenth century. The spatial development of both centres is rapid, and within two generations the maximum extension at both places exceeded 20 ha. In both cases the development of the towns is closely connected with earlier centres. The major political and religious centre of western Scania is transferred from the old location at Uppåkra north to nearby Lund (less than 6 km). The dislocation of the old regional centre of northern and central Zealand at Lejre north-west to Roskilde was only slightly greater (9 km).[20] Although the intention behind this change of location probably was to display the king's independence from local traditional power structures including such with pagan religious connections. In both cases it is more than likely that the inhabitants of the earlier centre moved to the new location. In the case of Roskilde, a location close to the southern end of the long and well-protected passage of the Roskilde Fjord is unproblematic. In the case of Lund, a location on the open coast would have been hazardous. Lund, however, supported a small port on the coast at Lomma only ca. 10 km away.[21] The Danish kings resided for long spells of time at both places, the dominating mints of the kingdom were also situated there. Already from the very beginning the church was active at both centres, and they both developed into diocesan seats. In 1104, Lund even became the seat of the archbishop of more or less entire Northern Europe. Churches were certainly among the earliest buildings on both sites, and perhaps already before the middle of the eleventh century stone churches and palaces were erected. Evidence of trade and exchange is limited, but it is difficult to see the reason why it is taken to justify a complete renunciation of trade as an important factor at both centres. At both centres testimony of craft production is not overwhelming, but also here some unexpected excavation results have contributed to a more balanced evaluation.[22] Urban centres of type 1 partly produced their own food, which, however, was not seldom also the case with many urban communities of the high medieval period and later, especially in the northern and eastern peripheries of Europe.

18 Nielsen/Schioerring 1982.
19 Andrén 1984.
20 Christensen/Andersen 2000.
21 Skansjoe 1980.
22 Ryding 1987.

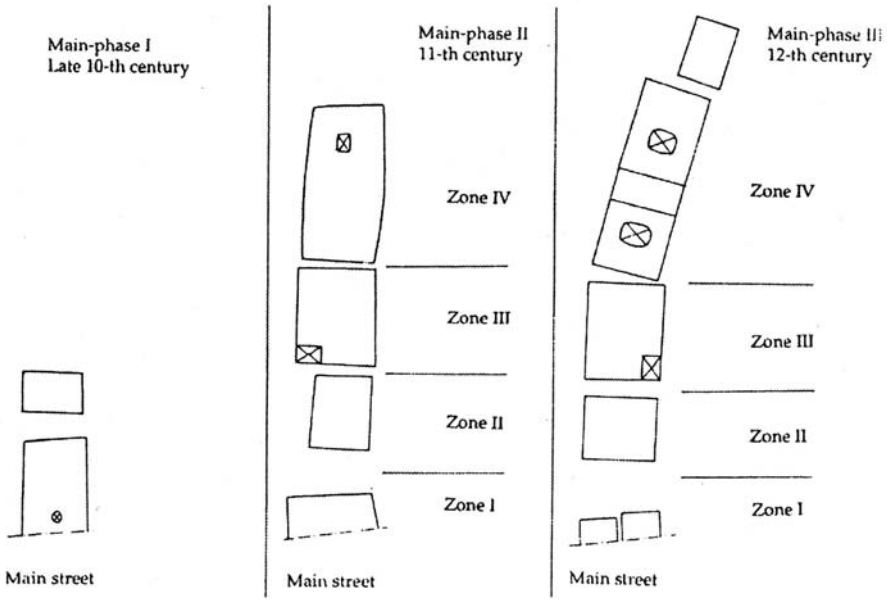

Fig. 4. Schematic plan of the development of a plot along the main street at Sigtuna

The medieval maritime trading town in Northern Europe in its ideal form is more a phenomenon of the twelfth and thirteenth centuries. There are, however, strong elements of this concept of urban centre in the cases of Sigtuna[23] and Schleswig.[24] Both places have obvious and close connections to the *emporia* Birka and Hedeby and thus are good examples for our type 2 above. In both cases the most important part of the urban territory was the waterfront with the ship landings. Only later did the street pattern somewhat modify this principle (Fig. 4). The differences between Sigtuna and Schleswig are, however, considerable as a consequence of their very different geographical situation and their very different time tables. The transfer of urban activities in the case of Birka/Sigtuna falls to ca. AD 970/980, a phase when considerable restructuring of trade networks and related craft production takes place. This results in a certain plainness of the find material in the beginning at Sigtuna. At both places the king's presence is important. Especially Sigtuna was important for the position of royal power in the kingdom of the Svear, which has a period of weakness beginning in the second half of the eleventh century. The presence of the king and his retainers is still badly documented in the archaeological material. The major excavations have revealed a system of plots orientated along the shore and the major street running

23 Tesch 2001.
24 Vogel 1989.

parallel to the water. The church manifests itself at both places, resulting in Sigtuna in the establishment of a diocese ca. 1070, whereas the bishop's seat at Hedeby goes back to the tenth century. Unfortunately, the earliest churches from Sigtuna are not known and also the grave material is insufficient to contribute to the important phase of Christianisation. In both cases we can observe a distinct urban culture different from that of the surrounding countryside.

The question of other urban centres of the tenth and eleventh centuries is a complex one. Only the further development of Ribe[25] and Aarhus[26] in Jutland can be said to have been sufficiently studied. Ribe is certainly a centre of type 2, becomes a diocesan seat and is fortified in the tenth century (ca. 11 ha). Its importance for the maritime connections of Denmark towards Western Europe was immense. Relocation from the north side of the river Ribe Aa to the south side in the twelfth century has nothing to do with discontinuity. From the beginning around 800 AD, Aarhus is already considerably smaller than Ribe, only reaching a size of ca. 6 ha in the tenth century when it is also fortified with a horseshoe wall. A diocesan seat is established in 948, with a mint installed later in the eleventh century. Notwithstanding its early beginning, Aarhus belongs to type 4. Horsens[27] is another early site on the east coast of Jutland with urban traits but lacking a longer continuity. A very interesting case is Aalborg at the topographically highly significant Hvalp sound between Vendsyssel and mainland Jutland.[28] In close proximity, a centre dating to the Viking period and a non-agrarian establishment dating to ca. 1000 have been documented, there is, however, urgent need for further work. At Viborg in northern central Jutland, a non-agrarian establishment takes place in the beginning of the eleventh century.[29] Both sites are closely related to the royal administration with early mints and to the church. Viborg became a diocesan see in the middle of the eleventh century; Viborg and Horsens can also be classified under type 4 whereas the status of Aalborg remains uncertain but could perhaps be type 1. On the island of Funen, Odense may count among the type 1 sites but the available source material is weak.[30] Odense is a diocesan see already before the end of the tenth century and later also a royal mint. On Zealand, both Slagelse[31] and Naestved[32] appear as non-agrarian new sites in the early eleventh century. Neither of these two sites has a precedent of any importance. On the other side of the Sound in Scania, in addition to Lund, obviously Lomma and Helsingborg according to contemporary criteria had

25 Jensen 1991.
26 Andersen/Crabb/Madsen 1971.
27 Knudsen Moeller/Schioerring 1992.
28 Johansen 1992, Knudsen Moeller 1992.
29 Hjermind/Iversen/Krongaard Kristensen 1998.
30 Thrane/Grandt-Nielsen/Nyberg 1982.
31 Arnskov 1931.
32 Petersen 1988.

an urban status. Lomma, situated on the coast of the Sound immediately to the west of Lund, is archaeologically still unknown. At Helsingborg,[33] the urban indications dating to the eleventh century are found both on the low shore strip by the Sound and on the heights above. The question of the antecedents must remain uncertain for wide scale destruction of late Iron age and Viking period settlement sites. Especially a large site to the south of Aettekulla may be relevant. Only a very small section of the tenth century phase has been excavated.

In addition to Birka/Sigtuna and little-known Gamla Uppsala it is necessary to mention Skara in the western part of the Swedish kingdom.[34] There is a diocesan see at Skara already in the first half of the eleventh century. The precedents of Skara rather suggest a significant communication location but no predecessor structures. Recent excavations at Skānninge (prov. of Ostrogothia) could indicate a similar development with an elite connection rather than a diocesan one. These characteristics they share with some other early-established ecclesiastical centres, like Linkoeping and Vaexjoe (both of the twelfth century). More significant for our problem is the question of early urbanisation in the Kalmar Sound area and on Gotland. In the late tenth century an important site is established at Koepingsvik on Oeland.[35] At 20 ha, the surface extension is remarkable, trade and craft evidence is abundant. Parts of the settlement seem to have been permanent. Activities are discontinued in the early twelfth century, when a transfer of the activities to Kalmar on the mainland coast would seem likely. The antecedents of Koepingsvik are unfortunately as yet little known, although there are nearby manifestations of a local elite. On Gotland, a number of probably mainly temporary trading sites on the coast with only one or two exceptions decline in the eleventh century. A permanent settlement at Visby, beginning in the eleventh century, has antecedents in one or two non-permanent trading sites on the coast nearby.[36] A number of later medieval towns in eastern central Sweden (Soedertaelje, Straengnes and Vaesteraas) have yielded non-agrarian eleventh century material. The finds are relatively poor and the contexts diffuse. Some sites are known from early written sources and all of them are important Christian centres, sometimes later resulting in a diocesan see.

The early urbanisation of Norway in our period of interest here has much less impetus and weaker continuity than in Sweden initially and especially than in Denmark; an important factor probably being the low density of population in most parts of Norway. As already noted, an *emporium*-like settlement arises ca. 800 at Kaupang in the Viksfjord area on the western side of the Oslo Fjord. With the establishment of this site, the traditional communication route along the west coast of Scandinavia was included

33 Wihlborg 1981.
34 Sigsjoe 1980.
35 Jonsson/Schulze 1990.
36 Svahnström 1990.

in the communication network of Northern Europe based on Ribe and Hedeby in the south-west. Kaupang has its strongest period in the ninth century when it extends over more than 4 ha. At least parts of the site were permanently settled. There is some metal-working, though rather indicative of visits by artisans than of their residence there. Activities on a more modest scale continue into the tenth century. It has been maintained that the establishment of Kaupang was an initiative of the Jutish kings. This is very uncertain. At its height, Kaupang was urban according to the urban life criterion.

Although no real targeted research has been carried out on the question of pre-Viking and Viking period trading sites on the Scandinavian west coast, it seems most likely that such places existed at several localities later appearing as medieval towns. The most important example is Bergen, where activities may have begun in the ninth or tenth centuries. A permanent urban society can, however, only be documented for the second half of the eleventh century. Another somewhat surprising example is Skien on the Oslo Fjord, which only much later developed urban status.[37] More examples are likely to turn up, but an urban status for these sites is unlikely before the second half of the eleventh century. A striking exception to this general trend is Oslo, where the Gamlebyn, an agglomerated settlement of urban type east of the modern centre of Oslo dates back to ca. AD 1000.[38] The connection with an early Christian church may be significant. The geographical situation of Oslo is special, because it does not relate to any of the densely settled regions but to the whole Oslo Fjord area. Trondheim has a similar chronology.[39] Here settlement starts at the end of the tenth century with a flimsy warehouse settlement on narrow plots. Similar to Sigtuna the location of the residential areas of the elite groups remains uncertain. With Sigtuna both Trondheim and Oslo share the importance of the ecclesiastical institutions and the network of the church. The urban character of Trondheim can be documented towards the middle of the eleventh century.

In order to understand the early urbanisation of Northern Europe we must consider several phases, parallel sequences and radical change. The first phase is the phase of the political centres, which appear in a developed form no later than the migration period. Although they feature some urban characteristics, the degree of urbanisation is low. The second phase is that of the *emporia* which were established in the eighth century. Their rapid emergence as large urban centres (high level of urbanisation) and their unambiguous role as nodal points in a basic trade network makes it possible to understand them primarily as phenomena partly outside the sphere of regional power politics. These two traditions run parallel to each other until the second half of the tenth century only in the southern part of Northern Europe, supplemented by phenomena like

37 Myrvoll 1991.
38 Schia 1992.
39 Christophersen 1994.

Aarhus. The third phase is the ambitious urbanisation programme of the kings and of the church beginning in the last quarter of the tenth century. In Norway and especially in Denmark, this is a political programme from the side of the kings; with minting at many of these places making a strong argument. It is, however, not to be forgotten that the church accompanies the efforts of the kings with the creation of ecclesiastical institutions. The relative stability of the urban network created with old and new parts is only safeguarded through the strength of the church and with a close connection between the church and the urban ideal. In the Swedish kingdom, Birka/Sigtuna are the only well-documented urban centres. There are, however, a number of sites with relevant observations which must be further elucidated. It is especially important to get a better understanding of developments in the eleventh century. We are somewhat better informed about the eleventh century development on the large islands in Baltic Oeland and Gotland. The question of continuity from earlier trading sites on the coast and their character remains unclear.

3. Early urbanism in Eastern Europe

We have already noted that the boom in trade in North-Western Europe in the eighth century spilled over into the Baltic without delay. But already in the sixth and seventh centuries, trade networks were extending into the lands beyond the Gulf of Finland. Here, Scandinavian groups had been tapping the fur resources through hunting expeditions and through trading with the sparse local population. Rudiments of a tribute system were then gradually established.[40] In the middle of the eighth century these activities were increasingly concentrated on the Ladoga-Volchov Basin. In the beginning, the high quality furs collected were traded towards the west to the Baltic and then further on to Western and Southern Europe, but ca. AD 770/780 contacts with trade networks operating from the domains of the Khazar Khaganate were established.[41] This opened up links with the main consumer centres of the Old World at that time in the Abbasid Caliphate. High quality furs were in high demand especially in Syria and Iran due to their severe winters. The basis for these networks was an almost explosive development in the north-western periphery of the Khazar Khaganate, where a number of urban centres arose like mushrooms *ex nihilo*.[42] An important factor for the emergence of these centres was a Khazar tribute collecting system encompassing large parts of Eastern Europe to the south of the Boreal zone. The important products were furs and increasingly slaves. The Scandinavians, probably already then known under the name

40 Callmer 1986.
41 *Idem* 1989.
42 Pletneva 1967.

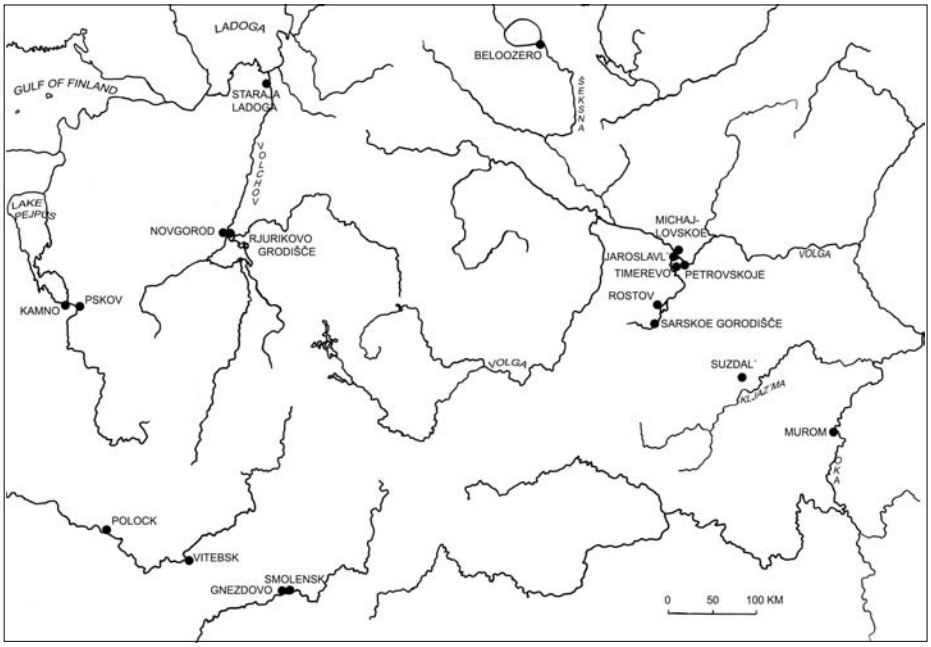

Fig. 5. Northeastern Europe. Early pre-urban and urban sites

of Rus', however, operated in a quite different environment in the north, both with respect to natural geography and to demography. The density of population was much lower than in most parts of south and central Scandinavia, and also lower than in the east Baltic lands. However, the quality of the furs collected in the Boreal woods was much superior to what the Khazar tribute collectors and traders would bring together. This concerns both the size of skins and the thermal properties and colour and gloss. The aboriginal hunters in the north were also much more experienced and efficient hunters than people in the south, where the economy was dominated by agriculture and animal husbandry.

When the tribute networks were extended, the Rus' also experienced the need for nodal points and centres (Fig. 5). The size of the northern centres was much less than in the south but that was natural because the whole scale of settlement was much, much smaller. Some interpretations have seen this tribute collecting as a chaotic and brutal matter. This is, however, completely wrong. The meaningful collection of tributes on a long time perspective was a delicate matter. There had to be stability and there also had to be both a 'pull' and a 'push' factor.

The most important early centre in the Rus' tribute collection network was Ladoga (later Staraja Ladoga), situated on the Volchov, one of the major tributaries of Lake

Ladoga and just below a series of falls in the river.[43] The site begins some time in the middle of the eighth century as a small agglomeration, possibly with a mainly Scandinavian cultural flavour. It was only a couple of hectares in size. The settlement is however soon extended and by the middle of the ninth century has certainly reached ca. 4-5 ha. Under other conditions this would be no great thing, but the local settlements in the Boreal forest zone were often very small, comprising only a few houses and with a surface extension of less than a hectare. Culturally the population was by now certainly mixed, with distinct Finnish and some Baltic elements alongside the Scandinavian component. The flow of Arabic silver in the form of Abbasid dirhams through this settlement is well testified and traces of the handling of mainly Oriental trade beads in the thousands is characteristic. Notwithstanding the rather rough excavation methods, more than 2000 discarded beads have been collected so far. The evidence of craft production of the type known from *emporia* in the Baltic region is so far slight. Through size, complexity and associated find material, no early outstanding buildings have been found, which however does not mean that they are not there. In order to be able to understand Staraja Ladoga properly, it must also be stressed that the settlement at Staraja Ladoga is part of a cluster of settlements and graves stretching along both sides of the Volchov River with only short intervals for ca. 5 km. About 5 km upstream to the south there is another cluster of at least five settlements strung along the river. Consequently the total weight of these settlements was very considerable in the region. There existed no comparable cluster of settlements and population in the woodland zone of Eastern Europe. When posing the question of urban status of this place, this strung-out structure should be remembered. Similar extended and strung out urban settlements along riverbanks are known in other connections, both cultural and temporal. Staraja Ladoga functioned as an *entrepot* for trade from the Baltic towards the south-east. The even more important function of the settlement at Staraja Ladoga was that of the top-level centre in an extensive tribute network. In the first half of the ninth century it included the entire basin of the Volchov, i.e. down to the sources of the Dvina and to the watershed with the Dnjepr Basin. To the south-east it had expanded beyond the upper Volga. There were also lower level centres situated in clusters of settlements along the rivers.[44]

As a consequence of the expansion of the tribute network, in the middle of the ninth century the Rus' relocated their paramount centre to Lake Ilmen'. Until then Staraja Ladoga had not been fortified, but the new centre was probably fortified from the beginning with escarpments, a ditch and walls. Moreover, the situation of the new centre on the east side of the lake at the outflow of the Volchov River from Ilmen' on a low hill, virtually an island in a low-lying marshy area, was a fortification by

43 Kirpicnikov 1988.
44 Callmer 2003.

itself. The surface area of the settlement is similar to that of Staraja Ladoga. It is very likely that a part of the population migrated up-river from Staraja Ladoga to this new site today called Rjurikovo Gorodišče.[45] There is a short period of decline at Staraja Ladoga that could correspond to these developments. The recent partial destruction of the Rjurikovo Gorodišče site makes the reconstruction of the layout of plots and houses almost impossible. The limited surface available is soon likely to have contributed to a dense settlement and to a settlement plan with streets and a stable plot division. At Staraja Ladoga a settlement structure of that type may only appear later. Trade activities connected with the transcontinental network were as important at Rjurikovo Gorodišče as at Staraja Ladoga. Some craft production can also be ascertained, but could partly be interpreted as visits by itinerant craftsmen. Rjurikovo Gorodišče however mainly functioned as a centre for the collection of tributes in the Rus' dominion in the Boreal woodland zone of Eastern Europe. As at Staraja Ladoga, an important deficit is the lack of any information on the cemeteries.

Further to the west the basin of Lake Peipus offered another possibility to penetrate into the interior of north-western Russia and large parts of eastern Estonia. The hydrology of the region may be regarded as indicative of the main communication network and this is corroborated by the settlement geography. Both factors fix our attention to the estuary of the Velikaja River, the main tributary to the big lake. The fortified site at Kamno[46] and the possibly similarly fortified site at Pskov[47] are especially intriguing. In the literature another site at Izborsk has been launched as the regional centre to the south of Lake Peipus;[48] with the rather odd situation of the site making this unlikely. Our knowledge both of Kamno and the raised tip of land, called Krom, at the junction of the Velikaja with its tributary the Pskova is very limited. Especially the conditions at Pskov (Krom) with large-scale later disturbances resulting in embarrassing lacunae are deplorable. The later development at Pskov is a further argument for the existence of an *entrepot* in the Velikaja estuary already in the first half of the ninth century.

In other parts of the woodland zone of Eastern Europe settlements with certain functions of a centre, like the residence of regional elites and economical centre are known, but their low level of complexity and lack of cultural otherness in relation to the local culture make them unlikely as urban centres. We can also note that they are mostly of much smaller size than the places we have discussed above. Many of them are also fortified, with varying degrees of sophistication and complexity. In the Dnjepr Basin, the tendency to establishment of centres belongs more to the migration period and shortly after. Only in the tenth century does this change decisively. Further east

45 Nosov 1990.
46 Plotkin 1982.
47 Beleckij 1996.
48 Sedov 1994.

among the Finnish peoples, fortified settlements exist alongside unfortified, sometimes forming the centre of a small settled region.

The sixties and seventies of the ninth century are a period of much unrest in Eastern Europe. It is perhaps best observed through a massive horizon of silver hoards found from the Baltic to the Volga.[49] This is probably due to a complex course of events also involving great changes in the Khazar Khaganate. The centres along the north-western border of the state declined dramatically and the political power of the Khaganate was weakened. The subsequent western movements of the warlike Magyars played a significant role in these changes on the northern marches of the Khaganate. There is much to suggest that this is also the period when the earlier leading elites in the Rus' tribute collecting network were eliminated and a new dynasty installed. This new elite group expanded the Rus' dominion into the Dnjepr basin, which largely had remained outside the scope of the earlier Rus' elite. Thus a bipartite Rus' state was formed: the Inner and Outer Rus'. The differences of the landscapes in the north and the south were very significant for demography, settlement structure and economic capacity. As has been already pointed out, settlement in the north was with few exceptions never dense and mostly located in clusters along major rivers and lakes with considerable gaps in between. Immense wetlands extended in the flat landscapes to the north and the south of the Valdaj hills. The potential for agricultural production was low. Thus, from the beginning traditional woodland products were the strength and attraction for the Rus'. As mentioned above, furs were paramount, but also wax and honey, possibly including venison and fish. Slave hunting had begun as being of only slight importance. As the extent of slave trading increased, the slaves were procured outside the primary tribute network. The tribute system was a delicate matter and overexploitation, the execution of excessive violence and destruction of settlements and their inhabitants would be counterproductive. It could by all means ruin the system and its fundaments.

The territories towards the south were different. With the exception of the immense Pripet Marshes the land was much better drained. The ground was consequently much drier and the natural vegetation with predominant broad leaf forests had generated soils much more rich in humus. In the south there were increasing stretches of loess subsoil covered by fertile black or brown soils. The vegetation period was longer and the summers much warmer. Although fur hunting was not completely hopeless in wide areas, the quality and the size of the skins could, as already stressed, not at all compete with the northern woodland products. The more favourable conditions for agriculture and animal husbandry had contributed to a relatively high density of population. The size of the separate settlements was seldom much bigger than in the northern woodlands, but they were much more numerous. It seems likely that the eighth-century Slav population of the central Dnjepr Basin was in a phase of strong demographic expansion. An espe-

49 Callmer 2000.

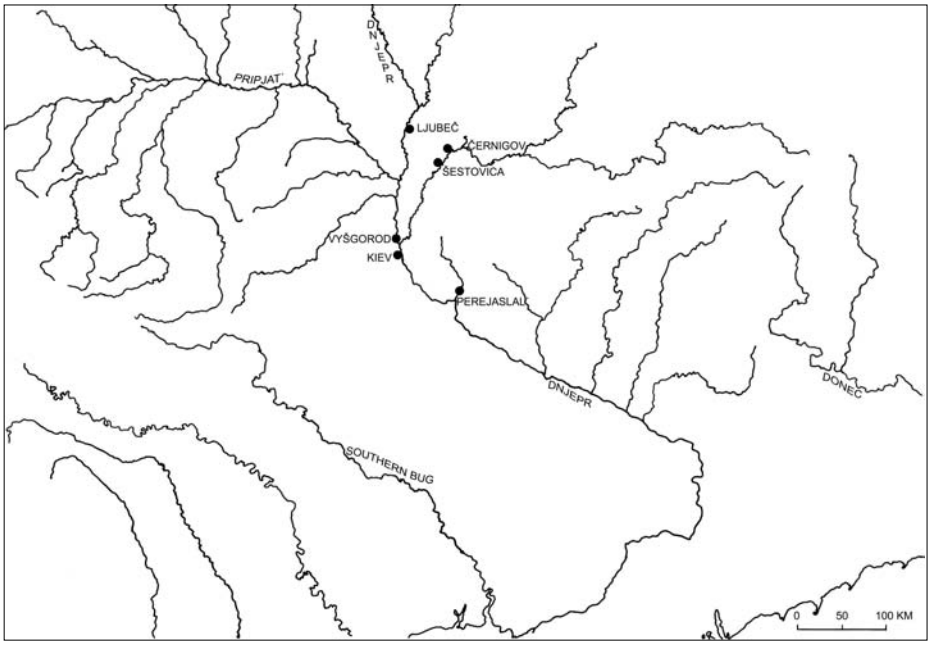

Fig. 6. Southeastern Europe. Early pre-urban and urban sites

cially forceful development can be followed in the lands to the east of the Dnjepr and along the Oka River. In the late ninth century the watershed between the Baltic and the Pontic drainages had been reached, and along the Oka river Slav groups were approaching the confluence of the Moskva River. This expansion brought about cultural change and an increase in density of settlement in regions with soil conditions and microclimate favourable for agriculture and animal husbandry. The process of acculturation among the Baltic and Finno-Ugric groups in the woodland zone runs parallel to the activities of the Rus'. We have good reason to reckon with this factor when discussing the dynamic growth of the Rus' urban centres in the ninth to eleventh centuries. Slavs early made up a considerable part of the population of centres also in the Inner Rus' and Slav farmers may have been settled on purpose in key regions.

In the south, in the central Dnjepr Basin, the new Rus' elite organised their new domains differently from those in the north. Initially they did not establish a network with subsidiary centres extending over the subjugated lands (Fig. 6), on the contrary, during the last two decades of the ninth century they established a line of strongholds along the Dnjepr. From the north this line comprised Ljubeč, Vyšgorod, Kiev and Perejaslavl''. On the lower Desna River, the major eastern tributary of the Dnjepr, nearby Černigov and Šestovicy were also included in the system. These were all well fortified settlements with a wall and ditch. In several cases they were founded on earlier

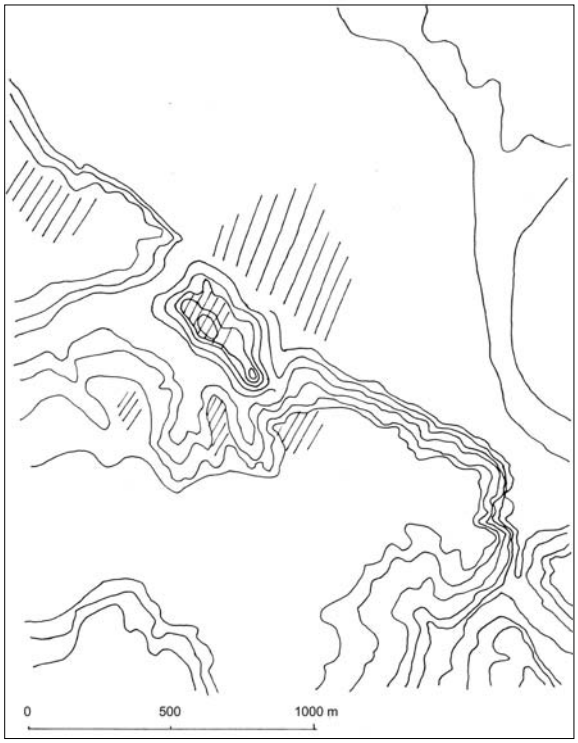

Fig. 7. Kiev. Settlement in the early tenth century

Slav fortresses. From this cluster of strongholds the Rus' bands mounted expeditions on water or land to the surrounding Slav communities collecting tributes mainly in kind. Valuable descriptions of the strange structure of this system are provided through information in Constantine Porhyrogenitos' *De administrando imperio* and through the probably authentic relation in the Primary Chronicle of the conflict between the Rus' elite in Kiev with the Drevlyanians, a Slav tribe nearby. Especially the latter incident, dated to AD 945, demonstrates how only 50 km to the west of Kiev lay the territory of a subject tribe where the Rus' had no permanent representation. Evidently the Slav population was highly unreliable and quasi-independent.

Our standard of knowledge of these Rus' centres of the Outer Rus' varies considerably. Unfortunately, excavations at Perejaslavl' and Vyšgorod have yielded very little information on their tenth-century status, although their early existence is well certified through finds of early wheel thrown pottery.[50] Early Ljubeč so far is best known from excavations of a few graves in the necropolis of the centre. Although for obvious reasons very fragmentary, our information on Kiev is much more relevant for our inquiry

50 Bogusevic 1951.

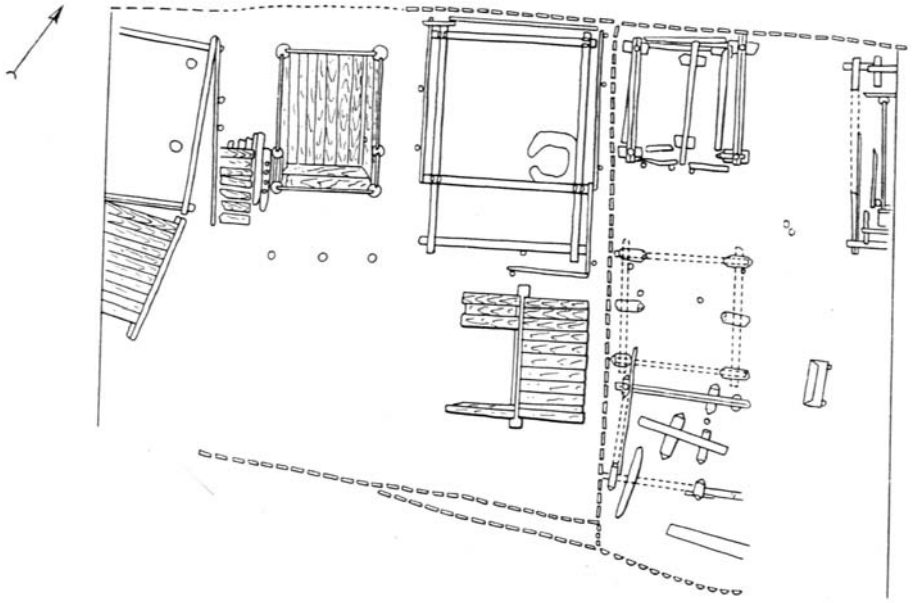

Fig. 8. Kiev. A tenth century plot in the centre of the Podil district

into urban origins.[51] In the ninth century, a number of relatively small settlements were strung out along the edge of the high plateau on the right bank of the Dnjepr. From the last decades of the ninth century, settlement begins to grow intensively along a stretch of ca. 2.5 km. From a settled area of ca. 10 ha to begin with, the surface extension in the early tenth century is already up to 30 ha (Fig. 7). Along the heights settlement covered almost all suitable land. Some sectors were used as barrow necropoles. There were at least two, perhaps three fortifications. Already before AD 900, the low-lying riverbank below the heights (the Podil) had been occupied along with a stable street and plot system (Fig. 8). Kiev was built mainly with small sunken-featured buildings and houses with horizontal timber. The latter building technique was among others used on the wet riverbank. It cannot be excluded that already in the middle of the tenth century a few Christian churches in wood may have been built. The strong development at Kiev runs parallel to the already described period of decline in the Khazar towns, which could mean that also Khazar elements from these towns settled in Kiev and other Rus' centres. It remains unclear if stone architecture reached Kiev before Christianisation. At least two stone palaces in Byzantine style could antedate the first stone cathedral, the church of the Tithes built in 988-989. By the end of the tenth century, Kiev could have had a surface extension of more than 80 ha and a population of more than 10.000 people.

51 Callmer 1981.

Although much less excavated, Černigov on the Desna[52] also had an impressive development from a settlement of a couple of hectares in the ninth century, to a settlement of no less than 11 ha in the early tenth century on the plateau overlooking the lowland along the river, including a stronghold with a very impressive wall. Below this part of the town an extensive settlement extended into the wetland zone of the Desna. Grave data are important at Černigov with several tenth century graves excavated. Šestovicy is situated only 15 km from Černigov and is not known from any of our written sources.[53] It eclipsed already in the early eleventh century. However, with ca 15 ha the settlement is quite extensive, including a fortified stronghold. Especially the extensive grave data from the necropolis are very important for the interpretation of the type of settlement Šestovicy belonged to.

The development of the top-level centres in Inner Rus' in the tenth century is also impressive. At Staraja Ladoga, the extension of the central settlement at the Ladožka estuary grows to reach at least 10 ha at the end of the tenth century. There are also observations to suggest that a small section was fortified with a dry stonewall. However, the most important changes are encountered further south: No later than the thirties of the tenth century, the settlement at Rjurikovo Gorodišče obviously becomes crowded and new settlements are established ca. 3 km further down the river Volchov (Fig. 9). The reason for the choice of a new place so far away may be practical as most of the riverbank is low and wet. The beginning of the settlement is on the left bank and may have included only five to six ha. The new settlement expands during the remaining part of the tenth century to reach at least 18 ha at the end of the century. At that time there is also a settlement on the right bank, this newly established settlement is the historical Novgorod.[54] By the end of the tenth century, the earlier, rather diffuse settlement becomes regulated with a street network and plots relating to the streets. Already from the beginning the Slav element in Novgorod is important for the settlement. Trade and craft is indicated by the rather rich finds, but the most important function is still the collection of tributes. The organisation of the subsistence of the Rjurikovo Gorodišče-Novgorod complex also called for functionaries. The residence on the old Rjurikovo Gorodišče site exists along with the newly established Novgorod. Unfortunately, the pagan cemeteries of the two parts of the complex have not been localised and excavated. We have no reason to doubt that already in the tenth century, Novgorod was the major centre in Inner Rus'. It has the character of an urban centre.

Further to the west Pskov also has a dynamic development in the tenth century but on a much less grandiose scale. Measuring ca. 3 ha at the end of the ninth century the surface extension is at least 10 ha at the end of the tenth century. Like in Novgorod

52 Kovalenko 2000.
53 *Idem* 2001.
54 Janin 1997.

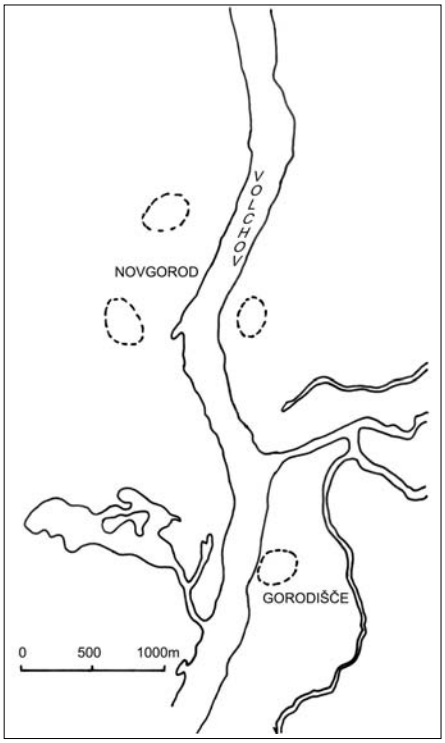

Fig. 9. Topography of the earliest phase at Novgorod (the middle of the tenth century)

excavations have failed to demonstrate a stable regulation of streets and plots for the tenth century. In the case of Pskov, the Pre-Christian necropolis has been located and partly excavated. The rocky tip of land at the Pskova and Velikaja confluence may have already been fortified at this time.

To keep the two rather heterogeneous parts of the Rus' dominion together, the link between the northern tribute collecting system based on the Ilmen' Basin and the southern cluster on the middle Dnjepr, it was necessary to solidify this link between the two systems. With this aim a permanent site was established on the upper Dnjepr at Gnezdovo, ca. 20 km to the west of contemporary Smolensk.[55] This place is situated on the northern bank of the large river where the water system of the Dvina (Baltic drainage) can easily be reached. Already before the middle of the ninth century, this periphery of the Inner Rus' had been included in the tribute network, and at least one regional centre had been established at Rokot on the Kasplja. If there was a non-permanent predecessor at Gnezdovo itself already in the 860s or 70s remains uncertain. A permanent settlement is established ca. 900 or slightly earlier, reaching ca. 5 ha already in the beginning of the tenth century. The further development in the tenth century brings the size of the

55 Smolensk 1991.

settlement to 15 ha including a fortified stronghold on a promontory on the Svinec brook close to the Dnjepr. In the second half of the tenth century a second settlement was established ca. 2 km down the Dnjepr. This settlement was much smaller in size, but it also included a fortified stronghold in a similar promontory position. Still in the middle of the twentieth century, ca. 3.000 barrows could be counted around the settlements, originally their number may have reached between 4.000 and 5.000. The find material from the settlement indicates both trade and craft production. The main cultural components are Slav and Scandinavian, with local cultural elements only poorly represented. From the beginning this settlement complex at contemporary Gnezdovo was named Smolensk.

Like for the earliest phase at Pskov, the earliest data on Polock on the Dvina, ca 20 km to the north-west of Smolensk, is very incomplete.[56] The beginnings of Polock in the second half of the ninth century are connected with a small, fortified stronghold (0.7-0.8 ha) and an adjoining open settlement. Already at the turn of the ninth century the complex may have reached ca. 5 ha and during the tenth century this size is doubled. The find material of the tenth century is mainly Slav in character. A barrow cemetery has existed but is today completely destroyed. The neighbourhood of Polock is only sparingly populated. The situation on the Dvina with excellent possibilities to control travellers on the river or along it probably greatly contributed to the dynamic development. From Polock, tribute and contribution collecting could be extended down the Dvina to Latvian tribes. Vitebsk further up the Dvina could have had a comparable development, but was a smaller centre than Polock.[57] The standard of knowledge is also inferior for Vitebsk.

The Rus' tribute collecting network had extended into the Caspian drainage already in the late eighth century. However, the establishment of centres comes relatively late. A local Merian (Finnish) settlement called Sarskoe Gorodišče (ca. 200 km east-northeast of Moscow) obviously played a key role in the development.[58] Unlike the majority of the settlements in the region it was fortified. Rich find material of imports demonstrates its intimate connections with the Rus' network. The cultural colour of the site however remains distinctly Finnish until the end of the tenth century, never reaching a size exceeding 2.5 ha. In the second half of the ninth century three settlements with a distinct Scandinavian cultural component are established around contemporary Jaroslavl, not far from the Volga, but not on the river itself. The site of Timerevo is best known archaeologically.[59] It comprises both a relatively large settlement (3 ha) and an extensive barrow cemetery. The other two are almost exclusively known from excavations of the cemeteries. There is much to indicate that these settlements played

56 Stychov 1976; Tarasov 1991.
57 Buben'ko 1997.
58 Leont'ev 1988.
59 Dubov 1982.

an important role in the organisation of the fur hunting in the woodland to the north and to the east. It is therefore most likely that this enclave was somehow integrated into the Rus' network and several details indicate an urban character. What above all remains a problem is the lack of dynamic growth of the sites. Rather, Timerevo could have been a regional centre of non-urban character, becoming obsolete in the course of the tenth century. Certainly more relevant is the development at Rostov on Lake Nero,[60] situated more or less between the two sites of Sarskoe Gorodišče and Timerevo mentioned above. Rostov starts to grow from a small establishment in the middle of the tenth century beside a Merian (Finnish) settlement on the bank of the lake. Already by the end of the century the extension is ca. 10 ha, growing continually. The cultural colour of Rostov has much in common with early Novgorod, although wheel-thrown pottery is not dominant until the eleventh century. In the far north-east, an important settlement is established in the late tenth century where the Šeksna River flows from the big Beloye Ozero.[61] This is the very beginning of the medieval town of Beloozero named after the lake. During the last decades of the tenth century there is a strong demographic and economical development in the eastern parts of the Rus' dominion. The dynamic colonisation of the Mesopotamia of the Volga and the Kljaz'ma had probably started even earlier. In the late tenth century a centrally situated settlement at Suzdal', with its roots in a Merian settlement of the ninth century, begins a distinctly urban development. Similar observations have been made recently at Murom on the lower Oka[62] not far from the easternmost limits of Rus' dominion.

The most dynamic development in the eleventh century takes place in southern and south-western Rus', with no less than ca. 30 urban centres now emerging in these parts of the Rus' dominion. This is partly related to a new power structure and change in patterns of the collection of contributions and also of trade. To begin with, the ideal of a central political and economical power is maintained, but it becomes more and more difficult to keep up. The tribal structure of the subjugated areas, still partly intact in the second half of the tenth century, slowly falls apart, and when local political power emerges towards the middle of the eleventh century with a number of principalities under the central power of Kiev, another, more covering network becomes desirable. Although long distance trade by no means is discontinued, there is less strength in these connections now and regional trade becomes an increasingly important factor. The size of these urban centres is moderate with ca. 3-7 ha. Consequently there is often a considerable difference in size between these regional centres and the old urban centres of the tenth century. The latter continue their vigorous growth pattern with e.g. Kiev reaching up to 80 ha and Cernigov 55 ha at the end of the century.

60 Leont'ev 1997.
61 Zacharov 2004.
62 Cf. Čalych 1985.

Fortification becomes even more important in southern Rus' and vital parts of the urban territory become walled in. This is mainly an effect of the southern urban centres' vulnerability to the attacks of nomad war bands. Craft production becomes increasingly important in the urban communities; especially metallurgical crafts are well documented. Very characteristic of the eleventh century in the biggest urban centres is the further development of monumental stone architecture, with Kiev here being exceptional with a stone building boom in the twenties and thirties. At least half a dozen churches were built and in the second half of the century a number of monasteries in the immediate surroundings were also built in stone. In Perejaslavl' an even more impressive stone building activity can be dated to the eighties of the eleventh century. Of the remaining urban centres of the south, only Černigov and Vyšgorod each had a stone built church. Churches built in wood are little known among the urban archaeological material, but must have been fairly numerous not only in the biggest urban centres.

The colonisation of new land is quite strong in a number of major and minor regions on the upper courses of a number of tributaries of the Neman, the Dnjepr and the Dvina. This intermediate zone between Outer and Inner Russia also features quite a strong urban development from the end of the tenth to the end of the eleventh century. A similar pattern to that in the south emerges. Forming a west-east ribbon from the headwaters of the Neman to the upper Dnjepr and the sources of the Dvina, a dozen minor urban centres came to life during that century. The older generation of urban centres also located in this zone remain dominant. Especially Polock grows rapidly, possessing a surface extension of just below 30 ha by the end of the eleventh century. A confirmation of its high status as an important political and economical centre is the erection of the Cathedral of St. Sophia ca. 1050. A similar but more complex and later development takes place at Smolensk. The development in the first half of the eleventh century is much less impressive than at Polock, with ca. 16 ha in the middle of the century. A relocation of the site from Gnezdovo and the Ol'sa-estuary ca 10 km upriver may have already begun before the middle of the eleventh century. The reason for this spectacular change may be connected with a regulation of the borderline between the subprincipalities of Smolensk and Polock. On its new site, Smolensk starts a vigorous development and in AD 1101 the Cathedral of the Assumption was founded. Although not without considerable importance, Vitebsk remains a much smaller centre in the eastern part of the Polock territory. The whole of this zone becomes increasingly involved with Poland and the Baltic. This is especially notable in the case of the urban centres on the upper Neman and of Polock.

There are no similar dynamics to the north of the intermediate zone just discussed. In the earlier established centres of Novgorod and Pskov, the growth of the urban territory continues uninterrupted. In Pskov this also means a stronger regulation of the plots (at least in one part of the town). In Novgorod, the parallel existence of Rjurikovo Gorodišče and the new centre at contemporary Novgorod comes to an end in the middle

of the eleventh century. At the same time a central fortified sector (Kreml') was built in the new centre. The third important innovation in the middle of the eleventh century in Novgorod is the erection of the Cathedral of St. Sophia in stone. This was for a long time the only stone built cathedral church in Inner Russia. A smaller stone church had been built soon after the Christianisation in Novgorod. Staraja Ladoga remains on the lower Volchov, but the further development reamins marginal only. In the middle of the eleventh century, Russa, located near the estuary of the Lovat', the major southern tributary of Lake Ilmen', may be recognised as a small centre. Far away in the north-east, Beloozero enjoys moderate growth during the eleventh century. That is about all that can be said for the north. The development in the course of the eleventh century accentuates the fundamental differences in structure between the north and the south.

In the east we have already noted the beginnings of Rostov in the preceding century. Although colonisation in those regions is considerably later than on the upper Dnjepr, the demographic basis for the formation of centres is gradually created. This is evident with the further growth of Rostov and Suzdal'. In the twelfth century more than a dozen minor centres can be noted for these eastern regions between the Volga and her tributaries, the Kljaz'ma and the Oka. Slightly further north on the Volga, Jaroslavl' emerges in the eleventh century.[63] A connection with the three specialised settlements of Timerevo, Michailovskoe and Petrovskoe is more than likely, but the exact process is still unclear. With their urban centres these relatively fertile regions in the east later become the heartland of Muscovy.

The interpretation above of the early urbanisation in the Baltic, the Pontic and the upper Caspian Basins goes strongly against the traditional view of the vast majority of Russian and Ukrainian scholars. For more than half a century – from Tichomirov (1946) to Tolocko (1989) – they have claimed the autochtonist model of urban development. In their opinion, the basis for the development of urban centres is the general economic growth during the eighth to tenth centuries. The core of each urban centre is always the fortified elite stronghold. The progress of the rural economy results in the development of suburbia with craft production. It is an interesting theoretical model, but it cannot be brought into agreement with the available data. The rise of urban centres in the Rus' dominion is inseparable from the political development of the early state. As it has been shown above, all important centres of the eleventh century were key locations of the political organisation of the Rus' in the preceding centuries. Had the political development been another one, it is most likely that with the distinct increase in population, technology and economy in Eastern Europe, centres would have emerged, which then stepwise would have acquired more and more urban characteristics. However, the early urbanisation of Eastern Europe is a unique process. The centres were of crucial importance for the development of the Rus' state up to

63 Dubov 1989.

the end of the tenth century, when the political structure gradually begins to change and when we can note the emergence of numerous second level urban and non-urban centres. The necessary functions of the early centres were that of the stronghold, a place where a considerable body of armed men could be maintained and a place where tribute could be collected. Petruchin and Pushkina (1979) have put forward a similar interpretation for Gnezdovo. This, however, was not the totality of the functions of the early urban centres. Trade obviously already passes through these sites from the start, and the early East-European centres belong to the same network as the Baltic trading places. Also, from the beginning there are some elements of urban crafts (as opposed to rural). Consequently, several of the early urban centres, especially in Inner Rus,' feature traits in common with trading sites of the Baltic Region. During the second half of the tenth century, urban development acquires more of a Slavic cultural flavour. The production of Scandinavian symbols is more or less abandoned in the east as in the west. Already from the beginning local material culture played a very significant role. The Rus' elite must be understood as a core with roots in Northern Europe but open to the local ethnic groups and in the tenth century already partly slavicised. Although mainly Slavic, the urban culture is distinct from that of the countryside. With the elements of Christianisation, Byzantine culture plays an increasing role in urban culture.

In connection with the conditions on the eastern marches of the Rus' dominion, the urbanisation of Volga-Bulgaria must also be mentioned.[64] Above, the development of urbanism in the north-western part of the Khazar state and its decline in the second half of the ninth century have been briefly mentioned. The main city and residence of the Khagan was Itil in the Volga estuary. Khazar urban centres were also found along the west coast of the Caspian and at the Kerč Straits and in the Crimea, their cultural colour partly connecting them with Byzantium and the Caliphate. The urbanisation of Volga-Bulgaria in the tenth and eleventh centuries has no local precedents and is contemporary with the state formation of the Volga-Bulgars. These processes are very rapid and forceful. The sudden and explosive rise of urban centres on the borderline between nomad and sedentary populations is not a unique phenomenon in the early history of Central Asia and surrounding regions. Urbanism and nomads have a close connection. The nomad life-style was only possible in contact with sedentary populations and their towns. Urban centres were also prestigious for the dominant elites in the Nomad society. The very modest beginnings, possibly as very extensive temporary campsites with tent cities in the first half of the tenth century, are difficult to follow in detail. It is, however, clear that the demographic basis of these centres was partly created by the arrival of local Finns from the woodland to the north (under political pressure?). Other components had their roots in the urban culture of Khazaria (cf. above) and possibly also in Central Asia. Like the Khazars, the Volga-Bulgars organised a network for the

64 Chusin 1993.

collection of tributes from the Finnish groups on the Vyatka and the Kama. This zone of influence probably extended far to the north and the north-east. In the north-west it reached the eastern marches of the Rus' dominion. It is, however, likely that the tributes were not the only means of collecting the products of the north, predominantly the high quality furs of the taiga. Written sources tell of the activities of traders and archaeology has revealed indisputable traces of trading sites on the lower Kama. By the middle of the tenth century permanent buildings begin to dominate the urban landscape of the Volga-Bulgar centres. Craft production, especially of metallurgical products, plays an important role. The conversion of the Volga-Bulgars to Islam contributed to a strong cultural influence connected with the religion. Mosques and baths have been documented from the eleventh century, but certainly must have existed already shortly after the conversion in the 920s. The biggest centres of Volga Bulgaria were Biljar and Suwar on the Čeremsan, a tributary to the Volga. Already at the beginning of the eleventh century they had a surface extension of more than 30 ha and they continued to grow during the following century. Bolgar at the confluence of the Volga and the Kama was slightly smaller. The Bulgar urban centres were fortified.

4. Conclusion

In several respects there are close links between the developments of early urban centres in Northern and Eastern Europe. The centres in the ninth and tenth centuries belonged to the same trade networks and they shared a number of cultural traits. However, in the archaeological record there is almost always a strong local cultural flavour (Gnezdovo may be an exception). The processes of urbanisation in the north and in the east are rather different. The process in the east is basically a successive establishment of centres for political and economical dominance within the framework of the Rus' dominion. Only as a secondary phenomenon do the trade network functions apply. From the beginning, development in the north is to a minor degree connected with political centres and to a major degree with the supra-regional trade network. Undisputedly local political power tries to exploit the trade centres, but this must be understood as a secondary phenomenon. In the late tenth century urbanism is actively used as a means to establish an organised state. First and most actively this is done in the emerging Danish kingdom; only later and less consequently is this applied in Norway and Sweden. A partly related factor is the emerging organisation of the church from the late tenth century onwards. This institution is important for the stabilisation of the urban process. In the east the political instrumentality of the centres is made relative when local networks of trade and exchange start to develop in the late tenth century.

Already in the late eighth century, urban culture is distinct from that of the surrounding countryside and this characteristic trait is partly a result of the networks to which the

centres belong. To belong to a network means that the information flow is much stronger at a centre than elsewhere. This is especially clear when we consider complex cognitive transfer. Many complex practices are connected with craft production. The possibilities of securing relevant source material from the centres are limited, especially for the early phases when the volume of production is small. After all, it seems likely that there is continuity in craft production throughout the period. Diversity was also claimed as an important characteristic of urbanism. Both in cultural and economical terms this can be ascertained for the centres. There is also a gradual cultural uniformation in the urban centres of Northern and Eastern Europe. This leads to an accentuation of northern cultural elements in Northern Europe, and the inclusion already in the eleventh century of elements of West-European culture. The east also already in the eleventh century has developed a specific East-European urban culture.

Especially for the east the growth coefficient calculated on the surface extent of the centres is impressive. It can however also be noted for the north. The almost constant expansion is a very interesting characteristic of the early urban centres of Northern and Eastern Europe. It poses a number of intriguing questions related to sociology, demography and economy (still little known): How was it possible to nourish these concentrations of people? Many of them were situated in fertile regions where the local production was sufficient, but especially in Inner Rus' organised colonisation and long distance transport of foodstuffs may have been important quite early.

When at last the question should be put whether there was an urban lifestyle in the general anthropological (global) sense of the word, we may conclude that the centres here treated featured numerous traits of an urban lifestyle. The question is most difficult to answer positively for the early political centres of Northern Europe. A certain level of urban culture was, however, present. For the *emporia* there is no reason to doubt their urban character. Also, the centres in the Rus' dominion from the very beginning feature some urban traits and they then evolve very rapidly with an ever broader cultural spectrum.

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Urban archaeology in Magdeburg: results and prospects

Thomas Weber

Archaeological research on medieval towns is a comparatively young discipline. During the origin of prehistoric archaeology, the focus remained mainly on those eras of the past without writing, with excavations on early history taking place mainly only in the context of "construction research" for the uncovering of subterranean foundations mostly of known buildings.

Even before World War II, Magdeburg saw attempts at research on the town's most ancient history employing archaeological means. Here I would like to point out the excavations by A. Koch, leading to the uncovering of a crypt in 1926 under the Remtergang in the angle between the choir of the Gothic cathedral and the east side of the enclosure.[1]

After 1945, it was local researcher W. Priegnitz who at first began making records of the cellars remaining from Pre-War buildings, thereby creating an important foundation for all later preservation work on historical sites in the centre of Magdeburg. Priegnitz determined that the cellars' construction was often based on the building activities of earlier centuries. Beneath Gründerzeit- and Baroque buildings were found Renaissance-age structures, moreover Gothic and even Romanesque substructions (though he was sure enough often mistaken in detail; it is not easy to positively identify these types of functional structure without any style of ornamentation alluding to their origin).

Since 1948, archaeological research excavations under the direction of the "Arbeitsgemeinschaft zur Erforschung der Vor- und Frühgeschichte Magdeburgs" (archaeological consortium for the research of Magdeburg's pre- and early history) began at first on the site of those buried cellars in which Priegnitz had identified a hall at the Buttergasse on the Alter Markt, the Old Market. From 1951 onward, work proceeded under the sole charge of the Akademie der Wissenschaften zu Berlin (the Academy of Sciences in Berlin) under the direction of E. Nickel (until 1967), resp. H. Berlekamp (until 1968). Among the studies that took place during that time was research conducted on the site of the Old Market with the Johanniskirche and the Johanniskirchhof,[2] at the

1 Koch 1926; see also Kunze 1930.

2 Nickel 1964.

hall on the Buttergasse,[3] several documentations on the foundation pits of Post-War buildings and, finally, the excavations on the Domplatz, the Cathedral Place (1959-1968).[4]

Then, in the year 1959, digging was begun by the Institut für Denkmalpflege (institute for conservation, Halle branch) in the Magdeburg Dom. Findings from the Dom-excavation were later presented by J. Schneider, who also addressed the Domplatz' chronology.[5]

Since the dissolution of the branch of the Akademie, the town centre of Magdeburg, with conservation activities supervised by the then Landesmuseum für Vorgeschichte in Halle (state museum for prehistory) and the Kulturhistorisches Museum in Magdeburg (museum for cultural history), ceased to be the focus of archaeological field work. Still, a restoration in the seventies of the monastery Unser lieben Frauen saw conservational accompanying,[6] as did the routing of a heating duct under the Regierungsstraße in the year 1980[7] and, one year later, the installation of a transformer substation on the Friedensplatz, finally, in 1985 exposures in the course of the reconstruction of the house Domplatz 5,[8] yet these exposures under complicated working conditions were only able to supply a limited gain towards insight into the early history of the town.

A new situation arose with the initially erratically escalating construction activity after the political reunification. On the basis of agreements with the different constructors, the Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt (state department for conservation and archaeology) also supervises the exposures connected with lesser and greater developments located in Magdeburg's historical town centre. The site, located between the Nordpark and Buckau, Westtangente and Elbufer, with its extensive historical (Baroque- to Gründerzeit-era) fortress construction was declared a memorial area. This then led to a large-scale documentation of such sites, in which any occurrence of medieval findings were not actually to be expected (from the ground plans of the sunken floor huts under the Friedensplatz to the early modern-age "pauper cemetery's" graves along the front area of the Baroque fortress), moreover, to discoveries leading to a modification of the picture of Magdeburg's oldest history. However, in the majority of these cases we owe the discovery not to any planned exploratory inquisitiveness on the side of the archaeologists in charge of the excavations, but to the *genius loci* of the respective site of construction – proceedings had to acquiesce to the requirements of earth moving planned for the respective building projects.

3 *Idem* 1960.
4 *Idem* 1965/66; *idem* 1973.
5 Schneider 1985.
6 *Idem* 1980.
7 *Idem* 1985, 299, Abb. 1.
8 Weber 1991a.

Among the most important discoveries to be expounded here of course such will be included that are able to help in the attempt of answering the town history's as yet unsettled questions (Fig. 1).

Early medieval settlement history and the beginnings of urban development

"For more than a thousand years has the *Magadoburg* been mirrored in the waves gently lapsing at her feet; solely when she saw her image in them and who her builder was, these questions no research has yet been able to answer." The famous two-volume history of the town,[9] which begins with these words, gives an account of the then – as today – available written sources on the earliest development of the town. A first mention in the Diedenhofener Capitulary from the year 805 does not merely by chance refer to the fact that trade between the Saxons, who had been incorporated into the Frankish Empire in the course of the Saxon Wars (772-804) and their West-Slav neighbours was in due need of reorganisation. Thus, this Elbe-crossing is mentioned besides Bardowiek, Schezla (Hitzacker?) and Erfurt as a site for the exchange of goods. One year later, the Chronicle of Moissac relates that in Halle on the eastern bank of the Saale and opposite the town of Magdeburg (*contra Magadoburg*) two Frankish forts had been constructed. The location of these forts has long been puzzled over, even the word *contra* indeed necessarily referring to the opposite bank of the Elbe has been questioned. Similarly conceivable would also have been a location on the same – western – bank, together with a separation from the emerging town by a dry valley at the edge of the plateau.

E. Nickel thought to have uncovered the Magdeburg fortress in the form of two v-shaped ditches underneath the Domplatz, while J. Schneider refers these trenches to the sixth/seventh century due to the discovery of predominantly unadorned egg-shaped pots (Eitöpfe) therein.[10] As is known, the ditches were overlaid by a large number of sunken floor huts.[11] In another sunken floor hut with a cladding of stones set in clay, Nickel finally unearthed the floor plan he was to identify with the *palatium* of Otto the Great.[12]

Which new insights into the earliest history of Magdeburg were thus gained, taking into consideration the state of research arrived at through the excavations of the last few years? The fortification ditches discovered by E. Nickel were again cut into, in profile beneath the entrance of the crypt at the south-eastern corner of the Domklausur, to the south and east of the Landtag (parliament) building on the north side

9 Hertel/Hülße 1885/1, 1.
10 Schneider 1985, 322-323.
11 Nickel 1973, 116.
12 *Idem* 1973, 126.

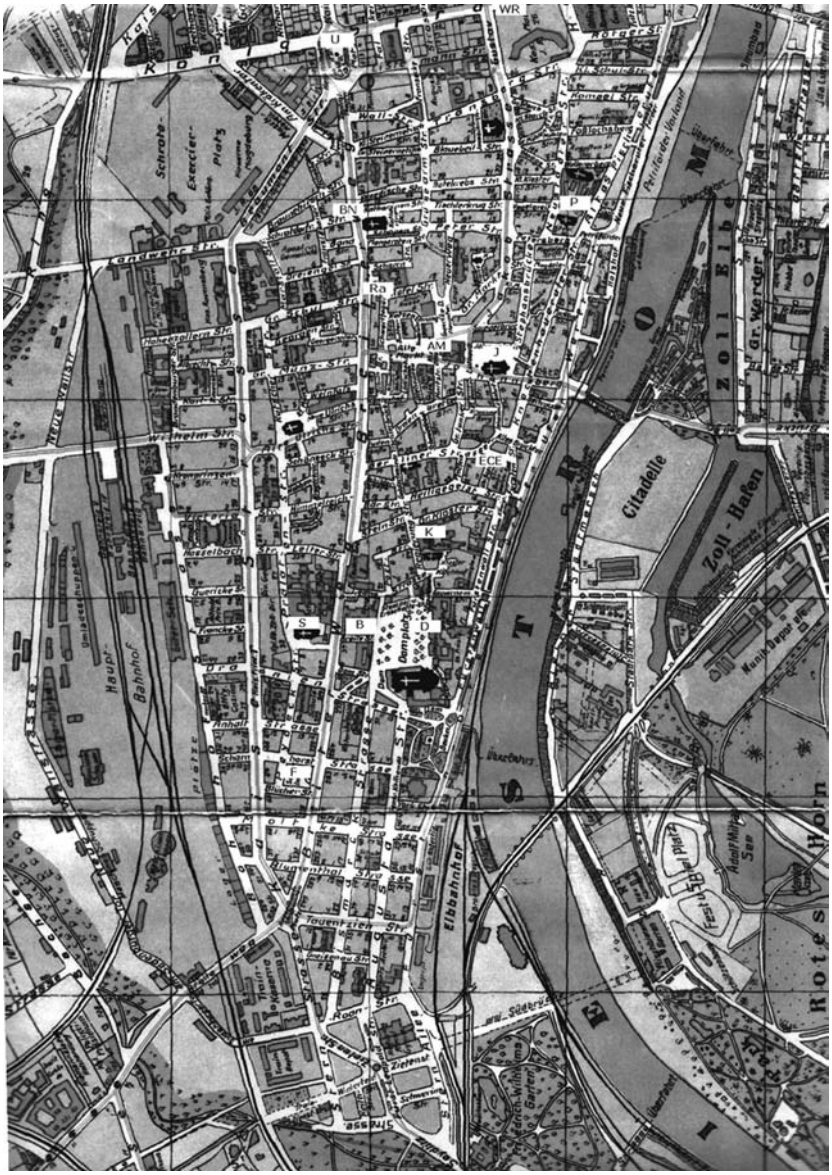

Fig. 1. Map of Magdeburg's town centre, ca. 1900, marking important excavations and rescue excavations since 1990. Abbreviations: AM - Alter Markt (with the hall on the Buttergasse and the IHK-underground car park Alter Markt 7); B - Breiter Weg 5-7, 8-10, 213, Landeszentralbank;. BN - Breiter Weg north section (east and west side); D - Domplatz and surroundings (roads to the south and east, houses/yards of Domplatz 1a, 1b, 2/3, 5, 6-9 (Landtag building), Remtergang, Domgymnasium); ECE - Allee-Center underground car park; F - Friedensplatz; J - Johanniskirche; K - monastery Unser lieben Frauen (with the new building at the Große Klosterstr./Fürstenwallstr., roadworks on the Große Klosterstr. and Gouvernementsberg); P - Petrikloster; Ra - Ratswaageplatz; S - St. Sebastian's church; U - Universitätsplatz; WR - Walther-Rathenau-Str.

Fig. 2. Magdeburg – Breiter Weg 8-10. A fortification trench in the test section at the north-eastern corner of the "Hundertwasserhaus"-building site. View from the south. Underneath a modern level of rubble (to the right in the eastern profile, under the surface) the profile shows the trench, containing loess and green sands, dug into the Oligozene green sand. In its northern profile (at back, left) it is segmented at approximately a right angle and thus, measured from a modern-day level, arriving at a depth of roughly 6 m. Nothing however has remained of the respective battlements, which had been expected to lie to the east (at right)

of Magdeburg's Domplatz and in plane in the course of the lowering of the southern segment of the Regierungsstraße. A third trench, running concentrically around the two mentioned above, was discovered passing from the south-western corner of the Domplatz in the course of the excavations for the new building sites of the Nord LB and the Hundertwasserhaus, the laying of conduits to the west of the Landtag building, through the examination of conduit trenches to the west of the Klausur building of the monastery Unser lieben Frauen and, at its most easterly extent, during the construction of an access way from the Große Klosterstraße to the Unterer Klosterhof. This trench, in some cases up to 7 m deep and 14 m wide (Fig. 2) can be regarded as identical to the finding already made in 1973 by J. Schneider beneath the entrance to the Klausur buildings of the monastery rebuilt after 1945.[13] Recently, during the archaeological documentation of conduit ditches in the north section of the Regierungsstraße, directly to the north of the Große Klosterstraße a fourth trench was discovered, possibly in turn surrounding the already mentioned other three concentrically.

13 Schneider 1980.

As already mentioned, the dating of the ditches presents certain difficulties. While E. Nickel placed the two central trenches discovered by him into the age of Charlemagne without any explanation in particular (though surely in reference to historical tradition), J. Schneider was rather prone to relegate them – due to the typology of ceramics found – to the old Saxon age. New radiocarbon data (animal bones) taken from the 2004 outcrop of the inner (eastern) "Nickel ditch" immediately south of the Landtag have given, however, the indication that the first steps of the filling of this (and perhaps also of the outer, i.e. western) ditch had taken place already in the fifth/sixth century:[14] Two charcoal pieces from a layer 70 cm above the base of the ditch filling gave calibrated radiocarbon dates from 416 to 598 AD, resp. from 418 to 595 AD (2 σ Erl-7677, Erl 7678). From the filling itself three dates were taken in stratigraphic order Erl-7676 (396-583 AD, 587-591 AD), Erl-7675 (558-671 AD), and Erl-7674 (434-490 AD, 508-518 AD, 528-645 AD). A final radiocarbon sample - Erl-7679 (774-992 AD) belongs to a lime kiln pit from the uppermost level of the ditch filling.

Therefore, *Magadoburg* – the "great castle" of the Franks first mentioned in 805, may have already borne its name 300 years before – in the period during which the region around Magdeburg received its own name, the Nordthüringgau. The upper layers of ditch refill should be dated to the second half of the sixth, resp. to the seventh century, representing the "Saxonian period" of Magdeburg's settlement history. We shall have to wait for the publication of the finds (esp. of the pottery) reflecting this process.

For the ditch west of the Domplatz there are numerous finds which also reflect a temporal sequence of the fillings from the lowermost to the upper layers. The radiocarbon data, predominantly from animal bones, demonstrates a time span for the fillings of the oldest ditch construction of between 638 and 896 (5 data), resp. of between 768 and 1042 (2 data) and for that of a stratigraphically later feature (possibly repairs?) of between 663 and 897 (5 data). The uppermost filling (phase 3) can be synchronised with the time span between 798 and 1128 (6 data). Two older datings of between 1094-821 BC and 652-782 AD may be interpreted as outliers: possibly due to a contamination through older bones from pre-existing settlements of this younger archaeological feature.[15] These data can be interpreted in the way that the filling of an existing ditch began in the seventh or eighth century, and that later – in the Ottonian period –, this ditch may simply have formed a flat depression in the growing town. It can therefore be assumed that this ditch may be synchronised with Magdeburg's first mention in 805.

14 Kuhn 2005, 52-53.

15 The deepest layers of filling only delivered few sherds, with combed ornament (Kammstrichverzierung) in a cross-hatch or chevron pattern, moreover some with combed lines, whereas the filling of the entire ditch probably only took place at a time in which "Kugeltöpfe" (ball-shaped pots) were already in use (I would like to thank B. Kunz for kindly providing me with this information). Kunz 2004.

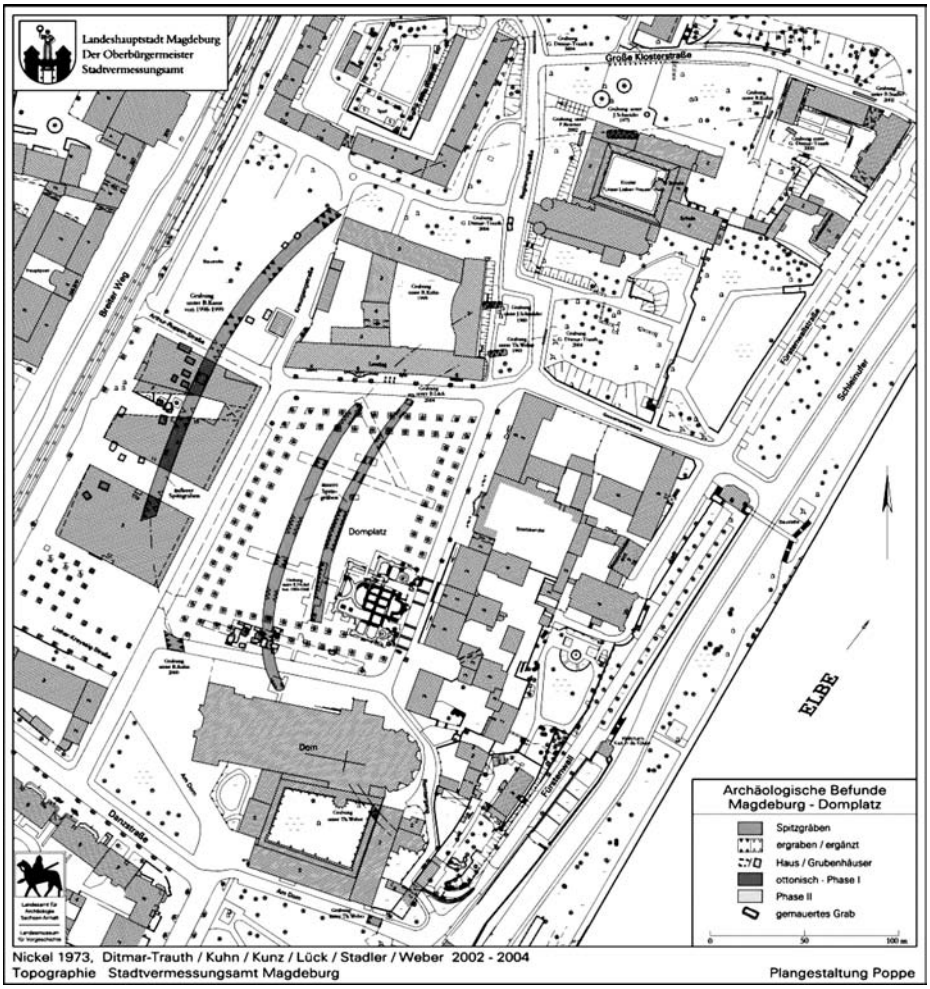

Fig. 3. Magdeburg – southern town centre. Fortification trenches discovered in the excavation by E. Nickel (1959-68) (a, b) and those established since 1997 (c). The sunken floor huts are probably mostly dating to the tenth/eleventh century

The final ditch, if it indeed generally belongs to the three aforementioned enclosures, was only once cut into until now. Remains of an anatomically arranged canine skeleton resulted in a radiocarbon dating to the ninth century AD.[16]

It therefore seems unlikely that all four ditches existed at the same time. Perhaps the two outer ditches (whenever the northernmost takes a course around the inner ditch below the Hundertwasserhaus, Nord LB, etc.) existed during the same, i.e. the

16 Ditmar-Trauth 2005c.

Carolingian, period. They represent the *Magadoburg* – the great castle dating to the year 805. The inner ditches below the Domplatz, firstly excavated by E. Nickel between 1959 and 1968, are obviously traces of a Thuringian fortress built in the fifth/sixth century. Thus, we have two subsequent fortifications – the older one with a north-southerly expansion of possibly 300 m surrounding an area of 3 or possibly 4 ha.

If we reckon with the concentric run of the outer ditch, we therefore arrive at an expanse in its north-southerly dimension of between 500 and 550 m (between the contemporary Fürstenwallpark beside the war memorial and approximately the area between the Große Klosterstraße and the former Heiligegeiststraße) with it thus probably having covered a surface area of between 10 and 12 ha, assuming an approximately semicircular shape of the fortification and an eastern boundary of the construction comparable to today's eastern slope of the plateau of the old town (Fig. 3).[17] However, in the case of all four trenches having belonged to one site, the utilisable "interior surface" would have been a lot smaller: a north-southerly extension from the Remtergang heading east of the Gothic cathedral to the monastery's churchyard (ca. 250 m) is conceivable, resulting in an area of around 2.5 ha – disregarding the fact that the required floor space of any buildings or fortifications (walls/palisades) above ground level inside (i.e. east of) the central ditch would still have to be subtracted. A comparable – albeit smaller, and as of yet undated – trench structure consisting of five concentric ditches was discovered by J. Henning and his co-workers in 2003 around the summit of the so-called "Weinberg" (vineyard) near Hohenwarthe (Jerichower Land)[18] (Fig. 4: interior surface nearly 1 ha, total area ca. 3 ha).[19]

Among all these observations, the question of respective interior buildings surrounded by the arrangement of ditches remains unanswered. In the course of the excavation supervised by R. Kuhn on the east side of the Domplatz, immediately to the west of the Staatskanzlei building (Domplatz 2/3; 1701) whose facade, as it appears today was rebuilt in Baroque style, apart from an easterly continuation of the floor-plan of the "*palatium*", unearthed by E. Nickel, the remains of a series of older buildings at

17 On the area located between the monastery Unser lieben Frauen, the Große Klosterstraße and the Fürstenwallstraße G. Ditmar-Trauth (2003, 220) describes a trench 4 m wide and 1 m deep with a level base, running in north-southerly direction directly to the west of the high medieval location of the river bank of the Elbe excavated by himself. Here, a vat had been embedded into the ground at the beginning of the twelfth century. The excavator assumes the ditch to have been filled at the same time.

18 A piece of charcoal found in a drilling core from one of these ditches can be dated to the first half of the first millennium AD. This does not exclude a synchronisation for such a construction of an earth and timber bank perhaps destroyed by fire with the second half of the first millennium. Henning (pers. comm.) refers to a number of early medieval or Carolingian parallels (Fulda, etc.) which distinguish by several concentric sharp ditches.

19 Henning/Milo/Weber/Wegener in print.

Fig. 4. Hohenwarthe – Weinberg, Landkreis Jerichower Land. Aerial view of the vineyard, outlining the system of trenches established through geophysical prospecting by the Johann Wolfgang Goethe-Universität in Frankfurt am Main

the same location[20] came to light, which cannot yet be definitely dated. Naturally one must assume that buildings outside of the system of fortification will have belonged to this Carolingian-age trading post on the border. In the course of the town's promotion to an Ottonian residence, an explosive growth of settlement activity is to be anticipated, of which the large amount of sunken floor huts and few post-hole buildings bear witness.

Settlement findings: palace architecture, churches, sunken floor huts and further edifices

A trading post, as Magdeburg had been in the Carolingian age, naturally extended beyond the immediate surroundings of the fortified areas. Many sunken floor huts and several post-hole buildings can therefore possibly be regarded as being associated (Figs 5-6). Interestingly, these sunken floor huts from Magdeburg are smaller than the comparable features from the early Saxonian and the West Slavic region. Possibly this reflects the position of these – Magdeburg – sunken floor huts in a walled area.[21] At first

20 Kuhn/Kunz/Ludowici/Pöppelmann/Puhle/Weber 2003, 40.
21 Weber 1991b.

Fig. 5. Magdeburg, Breiter Weg 5-7. Sunken floor hut after excavation. In profile (back) the sunken floor hut cavity can be clearly seen to intersect the natural layer of black earth, from which a recess of 60-70 cm below the original level can be inferred

glance, a precise temporal classification fails due to the small chronological relevancy of the early medieval ceramics. In many cases, it is not possible to distinguish between eighth/ninth century-findings and those from the tenth century (then possibly already located inside a fortified expanse). Still, in 2001 G. Böttcher and G. Gosch attempted to plot the finds – together with refuse pits, moreover individual findings from the Carolingian resp. Ottonian age within later levels – for the area of the historical old town of Magdeburg (between the Listemannstraße and Danzstraße). At closer scrutiny of this map,[22] the majority of findings date from "around 800", in an area between the Dom and the northern part of the Regierungsstraße east of the Breiter Weg, whereas to the west, north of the Johanniskirche they also appear in a rather looser distribution, beyond the expanse of the historical main road. Findings, both individual or in groups from "after 900" are likewise concentrated within the archaeologically intensively explored southern half of the old town; but also its central part (the former eastern area of the "Central Square"; the contemporary "Allee-Center") and the area directly to the

22 Böttcher/Gosch 2001, 411, Abb. 7.

Fig. 6. Reconstruction of a sunken floor hut at the time of its use. Even if we are here dealing with a finding from the Slav settlement area, the Old Saxon buildings – depending on the availability of suitable timbers in the countryside – will have been similarly constructed

south of the Old Market was occupied. In this compilation the sunken floor huts (and the stone buildings: apart from the building predating the Dom and the "*palatium*", also foundations set in clay of a timbered house to the west of the Himmelreichstraße) have not been dated more precisely (although the symbols for sunken floor huts have a colouring similar to those of tenth-century refuse pits).

There is no evidence so far concerning the extension of Magdeburg's fortifications in the tenth century and what these fortification exactly looked like. Only a few months ago the excavations in the courtyard of the Industrie- und Handelskammer, the Magdeburg Chamber of Industry and Commerce (Alter Markt 7) showed that a wall resembling Peters' (1905) so-called "oldest (Ottonian) town wall", should be dated to the late Middle Ages.[23]

23 At a speech given on the 11th January 2005, B. Dahmen, in charge of the excavations at the back yard of the Alter Markt 7 (construction of an underground car park for the Industrie- und Handelskammer, the chamber of commerce) was able to demonstrate that the dimensions and the shape of a wall established by her on the site and running in a north-southerly direction, corresponded to a large extent with the one discovered in the year 1905 in the foundation pit of the – current – new mayoral building located Bei der Hauptwache 4-6, even if both findings are not actually aligned and the finding from the Alter Markt site north of the foundation pit ends in an angling to the north-west.

It must be added that excavations in the vicinity of the (late) medieval town centre have likewise produced evidence for historical sites (a fact already indicated by the authors). This especially includes the discoveries in the course of construction of an underground car park beneath the Friedensplatz.[24] If similar finds (as of yet) only appear occasionally in the rest of the town centre, then the reason for this is to be seen first of all in the intensive claim on the remaining area of the town centre: in the first instance by the early modern- until Baroque-age fortification complexes, further by the intensive Gründerzeit-era building development (incl. development for traffic, i.e. trains and roads), resulting in selective exposure mainly only applying to disturbed features.

Clerical buildings naturally also belonged to the panorama of the early settlement. There have been different speculations as to the location of the Carolingian church consecrated to St. Stephen. Currently, there is no excavation finding (yet) which could compellingly be linked with that building. The floor plan of a church under the Gothic Dom, only reconstructed by the aid of scanty clues, probably dates from the tenth century; also belonging to this building are the (younger?) remnants of a crypt located directly to the east.[25] Finally, the buildings discovered by E. Nickel, then further unearthed by R. Kuhn 2001-2003 after the discovery of a complex burial site – as already demonstrated by Ludowici (2001) on the basis of the records of the Akademie-excavations from the 60s of the last century – cannot have been those of the *palatium* of the Kaiserpfalz of Otto the Great, but of a monumental church building constructed in two phases. Due west, beneath the Renaissance-/Baroque-age cellar foundations, which had to make way for the building site of the new Nord LB, B. Kunz unearthed a square floor plan with four apses, a foundation executed in the *opus spicatum* technique, which must be dated to the tenth/eleventh century.[26] Thus, the question of the location of the *palatium* of Otto the Great is again open; anyhow, R. Schmitt (1992) reports a probably secular, two-story stone construction surviving at the southern wing of the building of Domplatz 5 (with its orientation thus corresponding to that of the church buildings on the east side of the Domplatz), the face aboveground of which however belongs to the twelfth century.

In the course of the reconstruction of the Johanniskirche to the east of the Alter Markt, comprehensive conservational documentation was possible.[27] Six phases of construction could be established, the two oldest of which are older than a probably twelfth-century Roman basilica, fairly well to be established along the lines of its floor plan, to which the crypt beneath the Gothic quire, unearthed through a bombing raid in 1945 also belongs (Fig. 7). These two oldest phases of construction are represented by the rests of two apses beneath the crossing of the aforementioned basilica and part of a western wall, discovered 26 m to the west, which, due to the analysis of their mortar,

24 Gercke/Weber 2000; Gercke 2005.
25 Schubert/Leopold 2001.
26 Kunz 2002.
27 Schröder 1996; Krecher 2000; *idem* 2005.

Fig. 7. Magdeburg – Johanniskirche. Romanesque crypt beneath the Gothic quire in the course of excavations before its reconstruction (twelfth century)

may possibly belong to the older (larger) of these two apses. The two apses overlay a burial site (with the interment executed according to Christian rites in an east-westerly direction), according to its calibrated radiocarbon dating belonging to temporary intervals between 784-786/874-984 (1-ó-probability: 68,3 %) resp. 779-792/801-998 (2-ó-probability: 95,4 %). It is hereby important to note that Christian funerary practise already existed in the tenth century in the vicinity of the Johanniskirche.

Early medieval graves

Graves from the time of interest are – mainly – tied to those churches attested to in our written sources. Their dating is thereby often made more difficult due to a scarcity of grave goods according to Christian burial practise. Especially for the oldest funerals the problem is added that up until the construction of the Nordfriedhof, the northern cemetery in 1827, Magdeburg's prosperous citizens were always buried in the same cemeteries, resulting in the older graves constantly being destroyed by later burials. Together with the impressive amounts of graves from the Middle Ages to the early modern era unearthed in the last two decades of research on the town centre, we can note that the oldest graves have only exceptionally remained intact.

It can be safely assumed that the graves discovered in the course of excavations at the east side of the Domplatz belong to the pre-Gothic era, except for the "vault", dendrochronologically dated to the third quarter of the tenth century, moreover those burials immediately to the south of the construction inside it. Irrespective of the possibility of their either being interred while the building around them was still intact, or only after its demolition (resp. the demolition of the older phase in the robber trenches from the foundations), they always exhibit the same orientation as the "*palatium*" (and the building predating the Gothic Dom). This is true for all of the burials north of the roadway on the southern side of Magdeburg's Domplatz. In contrast, the graves located

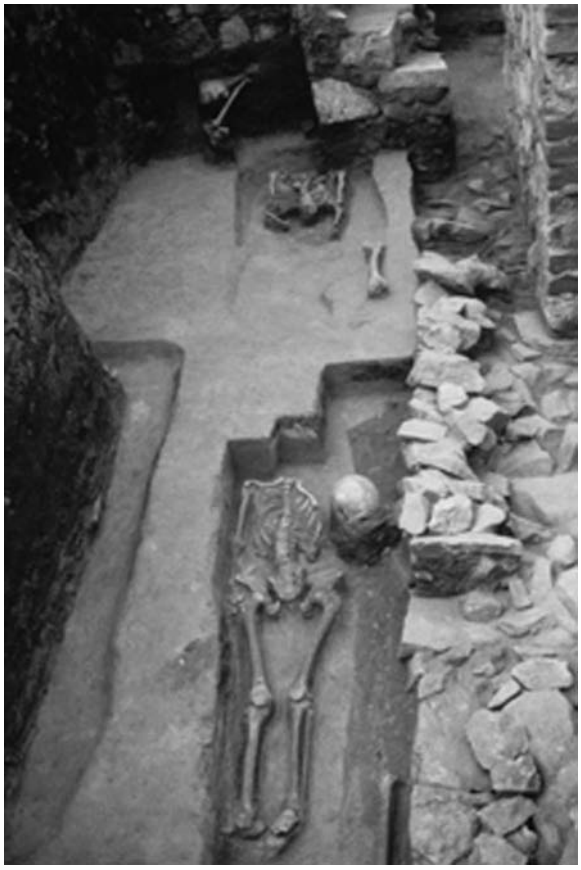

Fig. 8. Magdeburg – Johanniskirche. Grave with head alcove in the spit immediately beside the masonry from building phase IV (twelfth century)

beneath the adjacent pavement area to the south are orientated like the Gothic Dom, thus probably belonging to a date after 1207.

A burial site in the vicinity of St Johannis existed at least from the tenth century onward (radiocarbon dating of the grave under the two apses) and of course in the following centuries: The characteristic graves with head alcove (Kopfnischengräber) in the neighbouring Johanniskirchhof to the north and inside the Gothic church (Fig. 8) already date from the twelfth century.

The town on the Elbe

Magdeburg's location on the Elbe is a factor of marked influence for the history of the town. After all, even its first mention on the eastern border of the Frankish Empire refers to it and in the history of the tenth century, Magdeburg formed the most important

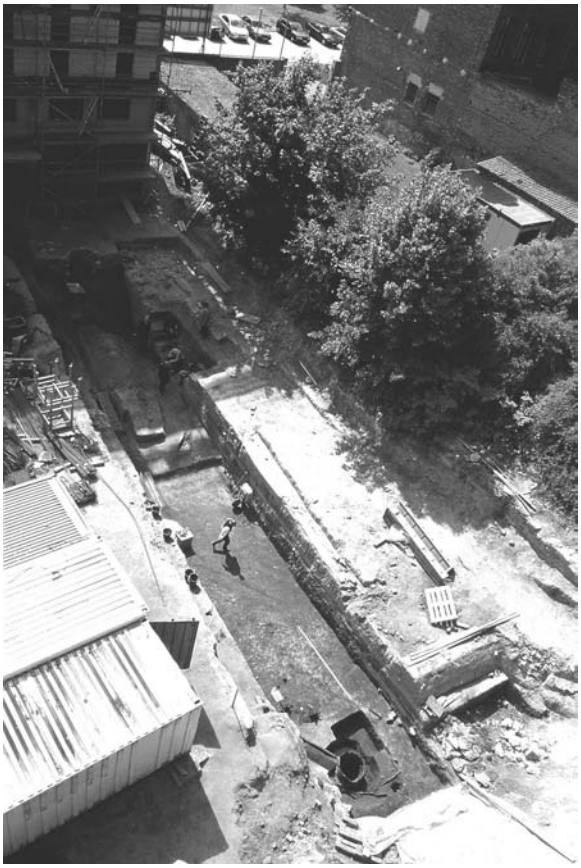

Fig. 9. Magdeburg – Große Klosterstraße/Fürstenwallstraße. View of the excavation trench from the northwest

starting point for Otto the Great's imperial policy bent on "eastern expansion". The town's development on the west bank of the Elbe has so far only undergone scarce archaeological scrutiny – during the building work in the Möllenvogteigarten in the substructure of the ablated north section of the Fürstenwall erected in 1525, immediately to the east of the Dom area, and especially during construction of an underground car park on the site Große Klosterstraße/Fürstenwallstraße (Fig. 9)[28]. A complex sequence of levels of river sediment (transgression sands and peats), moreover anthropogenic earth deposits were uncovered here, bearing witness to the changes between flooding and low water levels, moreover finally of a permanent "land reclamation" in the high Middle Ages. Due to the absence of air, also organic objects (wood) were preserved through ground water, including a facility of tanner's vats (Fig. 10). An embankment of the area had been executed with the aid of sharpened pickets and was apparently still

28 Ditmar-Trauth 2003; *idem* 2005a.

Fig. 10. Magdeburg – Große Klosterstraße/Fürstenwallstraße. Double-hulled tanner's vat with keg *in situ*

in use in the fifteenth century.[29] In 1525, the so-called Fürstenwall farther eastwards was erected as the eastern boundary of the old town – firstly as an outer ward between two walls, then, beginning in the early eighteenth century, being filled with excavated soil, as one of Germany's oldest civic parks. Excavations for the new underground car park of Magdeburg's Allee-Center shopping mall at the northern end of the former Fürstenwallstraße/Am Alten Brücktor hold the promise of further interesting discoveries in the near future on the interaction between the town and the river in the Middle Ages. During the twelfth century, this area changed from an occasionally flooded river zone to an integral part of the old town – as we are able to see from the dendrochronological dating of wooden planks from corduroy road.

Comparable remains (posts of a bar or bridge construction) in the course of the Klusdamm in the eastern part of the valley of the Elbe around Magdeburg, secured during flood control work in the autumn of 2004, were dendrochronologically able to be dated to the period between 1565 and 1802 – with traces of repairs made nearly up to the rebuilding of the Berliner Chaussee during the Napoleonic period (1810).

Contributions of urban archaeology to the history of the high/late Middle Ages and early modern age

In discussion with constructors, but also with other experts, the question on the validity of occasionally rather complex studies on the high and late Middle Ages and the early modern age is raised. It has to be pointed out that, along general lines, the history "is already known anyway" and that only a limited increase in knowledge is thus to be expected from such excavations. Doubts are raised on the validity of excavations in the course of which, for instance, merely that picture is verified already known to us

29 *Idem* 2003, 219.

from seventeenth-century prints by Merian. To this argumentation one should note that such studies undertaken for reasons of conservation can only ever represent the *ultima ratio* in the face of pending destruction due to ground removal. Moreover, older findings – "worthy of documentation" in the sense mentioned above – on the same do not *a priori* exclude any discoveries from a more recent date (and especially not during the planning stage of an excavation). In many cases, in the course of a single survey one will arrive at an ascertainment of completely heterogeneous older and younger findings. Through an interdisciplinary approach we are thus able to achieve an "agglomeration" of the historical picture, especially for the more recent periods known only through meagre outlines from written sources on historical events: statements as to the use of the land through pedological scrutiny, on dietary habits by means of archaeozoology, on questions of crafts and technology via chemical and physical analysis of the find material, etc. Some rather exemplary instances particularly for discoveries on the more recent ages shall be presented below.

Discoveries must not always lead to such spectacular findings as was the case with the conservational surveys accompanying construction on the north side of the Gouvernementsberg in the autumn of 2003.[30] Here, the old boundary of the monastery area (Klosterkirchhof) towards the Gouvernementsberg, cut into the eastern slope of the plateau was to be reconstructed again – through the clearing of rubble of houses destroyed in 1945 from the remains of their cellars along the road and the exposure of a revetment, abutting these plots against the elevated monastery's church yard. The wall at first appeared to be made of brick in a large-scale – in this case probably Baroque – format characteristic for monasteries. Yet horizontal drilling into the wall showed that another wall made of roughly hewn stones was located behind it, resulting in the decision to dismantle the brick wall facing. Hereby it was found that quite a number of medieval *spolia* had been immured into the natural-stone revetment behind the brick wall; the most striking of which was a 1.10 m high Gothic female statue from around the turn of the thirteenth to the fourteenth century. The figure consisted of two parts – head and torso, frontally immured into the wall "in an anatomically correct position" (Fig. 11). The other fragments of statues, moreover of pieces of *epitaphia* and late Romanesque altar panel had been used as building material for the wall, irrespective of their facing. With these finds, the factor is of special importance that several of the objects retained substantial remnants of their medieval colouring – remains that would have long ceased to exist in the case of the statues centuries-long installation outdoors or even in closed rooms.

On the north side of the Breiter Weg, between the Ratswaageplatz and the Universitätplatz, two excavations took place in the last couple of years. In the course of the enlargement of the business district and the creation of parking areas behind

30 Besener 2005a.

Fig. 11. Magdeburg – Gouvernementsberg. Head and upper part of the body of an immured Gothic female statue (ca. 1300) in situ, included into a revetment, probably dating from around the year 1700

the high-rises on the western side three confined areas could be surveyed under the direction of B. Kunz. Under a post-War earth deposit about 1.5 m thick, rests of the buildings destroyed in 1945 came to light, including cellars dating to before the date of the destruction in 1631, whose filling with rubble had already taken place in the wake of the Thirty Years War. The result of the study within this area, extremely densely populated until 1945 and then thoroughly reshaped, most of all consisted of the establishment of the fact of the existence of archaeological material going back all the way to the Middle Ages.[31]

On the east side of the road excavations in the course of the construction of a new canalisation were to be accompanied. A first segment under today's Ratswaageplatz yielded the remnants of a graveyard from the thirteenth/fourteenth century underneath the foundation trenches of the old town weighing house (alte Ratswaage) demolished in 1866, which currently cannot be associated with any known church.[32] On the contrary,

31 Kunz 2005a.

32 Besener considers if this could be the cemetery of the Franciscan monastery located to the west of the Breiter Weg, but which then would have been separated from the actual buildings by the main road, probably already highly frequented in the high Middle Ages. Besener 2005b.

Fig. 12. Magdeburg – Breiter Weg-northern section, east side. In the course of sewer renovation works, cellar brickwork, probably of Romanesque origin, was unearthed immediately below the modern road level, excavated while accompanying the digging of a sewage canal in summer 2003

over the entire north-southerly extension of the following excavation under the direction of A. Pieper,[33] the northern town wall from the time of Archbishop Wichmann[34] failed to be detected, as opposed to the discovery of a prehistoric trench extending in north-southerly direction over a length of 50 m further to the north underneath the Breiter Weg, possibly having surrounded a settlement located to the west (!). Directly below the modern-day road level, one of the cellars on the east side of the road north of the Katharinenkirche (= the former "Haus der Lehrer", the house of teachers) displays good-quality, probably Romanesque masonry (Fig. 12). Again this observation, if not alone, not only very impressively demonstrates, how important building substance remained preserved only little below the level of the modern road, but moreover also hints at the possible existence of early stone architecture in an area which, according to our written sources, only belonged within the walled old town of Magdeburg since the early thirteenth century.

The new construction of a Catholic community centre north of the Petrikirche (Fig. 13) occupied an area which had belonged to a monastery of Augustinian friars during the Middle Ages, the large hall church (Hallenkirche) of whom had survived the destructions of both 1631 and 1945. Even if the church had served the Wallonian Reformed parish since 1694 and the monastery was converted into an old people's home in the nineteenth century, excavations brought to light both prehistoric and high medieval findings, far predating the monastery proper (ca. 1285).[35] The historical tradition of the town here locates the fishing village of Frose, first documented in 937, with its parish church of St Peter's, whose tower still dates back to the twelfth century. In the course of a supposed northern enlargement of the Wichmannstadt under Archbishop Albrecht (1205-1232) – transcending a boundary wall which, although repeatedly mentioned, has so far never been recorded in its stratigraphic context (thus also in the course of the excavations on the eastern side of the northern section of the Breiter Weges; see above)

33 Pieper 2005.
34 Comp. e.g. Mrusek 1966, 50, fig. 28.
35 Ditmar-Trauth 2005b; *idem* 2005c.

Fig. 13. Magdeburg – Petrikirche. Excavation on the area of the former Augustine monastery north of the Petrikirche

– the medieval old town extended to this area. Findings from this excavation – i.e. from a limited area – can naturally neither confirm nor disprove this hypothesis in detail. Yet at least they demonstrate the existence of settlement activity both in the pre-Gothic time, as in the time after the early thirteenth century, the boundary of a period which approximately complies with introduction of Blaugraue Keramik (blue-grey ceramics).

The oldest medieval findings are refuse pits from the tenth/eleventh centuries, among those such with datable ceramics with waved decoration (Wellenband) ornamentation and large amounts of animal remains, including not only the bones of meat stock, but also shells, fish scales and fragments of eggshells, which, similar to the stones of different fruit also discovered, await further, archaeozoological or archaeobotanical processing. A house pit and a well, probably only abandoned and filled in the course of the thirteenth century, both probably date to the twelfth century. Two deep, rectangular shafts, from which finds dated to the fourteenth and fifteenth centuries recovered, are rather to be already classed as belonging to the late Middle Ages. In the northern part of

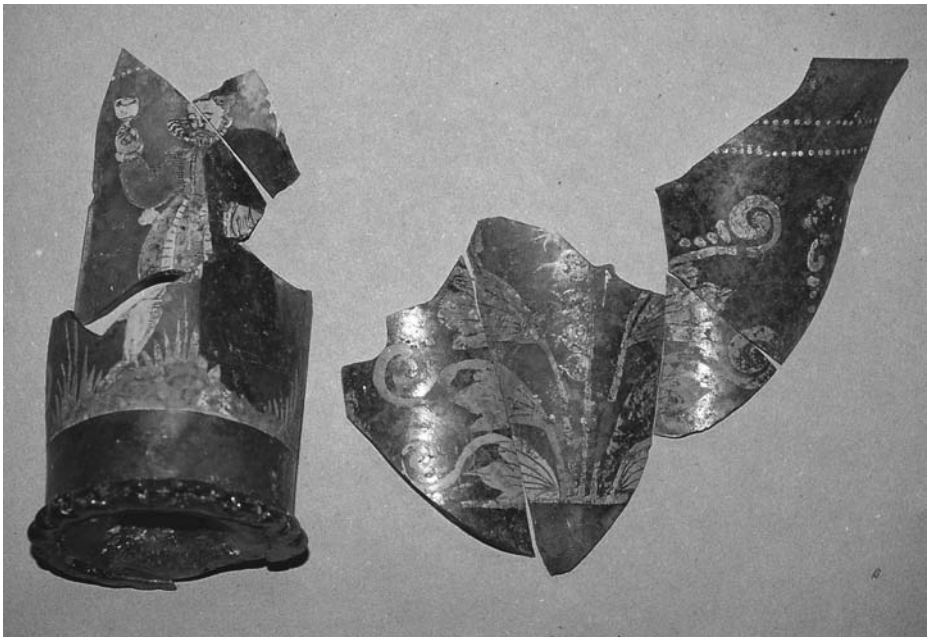

Fig. 14. Magdeburg – Petrikirche. Dated fragment of a painted drinking glass from a well probably filled in 1631

the west side of the excavation area a massive wall, contaminated/disturbed by modern findings (and thus perhaps to be dated in the sense of a *terminus ante quem*) was to be detected, which must be regarded as the back wall of one of the wings of the Augustine monastery. A cellar, filled in the course of the building of the wall covers an older stone construction at the location. Possibly the red sandstone wall belongs to the Wallonic era, and the older cellar into the period of the monastery (after 1285). The destruction during the Thirty Years War is manifest in the shape of a well probably filled in 1631, containing amongst other things painted pieces of broken glass from drinking vessels (Fig. 14).

After the political reunification, the hall in the Buttergasse already mentioned above, discovered in the ruins from the War became the subject of archaeological research for a second time.[36] The flat building constructed over the vaulted cellar was removed; a modern business building of larger dimensions, extending further especially to the south and west was to be erected. Earth movements in the course of construction also enabled a scrutiny in the interior, underneath the floor. It was hereby possible to verify a hypothesis of E. Nickel,[37] who had pointed out the different designs of the pillars in

36 Köther 2005.
37 Nickel 1960, 36.

the interior: Thus, the central column of pillars, made of carefully processed trimmed stones was to belong to an older phase of construction, probably dating to the twelfth century, during which the hall had been covered by a timbered ceiling. A vaulting carried out in the thirteenth century no longer allowed a bridging of such distances as from between the central column of pillars and the north and south walls, resulting in the erection of additional secondary columns of pillars, distinguishable by the ashlars of smaller size employed in their construction. This hypothesis was then later confirmed due to the establishment of a stratigraphic overlapping of two building pits – with one of those of the central column of pillars having been intersected twice by that of the neighbouring exterior pillar to the east.[38]

Several interesting findings were also unearthed outside the hall: Apart from three market stalls,[39] probably from the fourteenth century south of the building on the approach from the Breiter Weg to the Alter Markt, a square of medieval paving from the Buttergasse to the east came to light. To the west, at the former Schwertfegerstraße, two stone wells were excavated, which, according to the finds salvaged from them, had been filled in the late thirteenth and the fourteenth/fifteenth century. It is conspicuous that practically all of the finds from the excavation – at least in the case when they can be unambiguously associated with contemporaneous findings – are of a later date than the masonry of the hall.

The collegiate church St Sebastian's, today's cathedral church of the Catholic diocese of Magdeburg, south of the old town to the west of the Breiter Weg, was to be again furnished with an ambulatory – as it had actually already once had during the Middle Ages, to the north of the nave. In the year 2002 altogether a number of 27 burials were able to be established in an area of only 15 m², with only eight of these however not having been disturbed. The graves will not all have been those of collegiates themselves; a number of (small) infant burials also occur. In the absence of grave goods, the dating of the findings can only be established indirectly: In the burial pit belonging to one of the graves from the deepest layer, some single blue-grey sherds were discovered; while on the map of Matthäus Seutter (around 1740) the cemetery was also marked as such, it is mentioned by name only by the chroniclers Berghauer (1800-1801) and Hoffmann (1803), as on the town map by Cammer (around 1860). But

38 Köther 2005, 158.

39 The stalls moreover contained rich amounts of finds of such wares as were seemingly traded therein: One contained rests of bone workmanship, including pre-worked blanks of dice, a second one copper/bronze sheets, wires, needles, rivets, hinge joints, buckles, fittings probably mounted on leather (which is no longer in existence). In the third one finally, pieces of glaziery slag, together with molten glass and small fragments of drinking vessels were found. The excavator presumes that this could represent traces of glass recycling, with the sparse fragments – also found elsewhere in town – of small glass rings and a small smoothing stone (for smoothing seams) having been the possible products aimed at.

after the construction of the new municipal cemetery, the Nordfriedhof, in 1827 at the latest no burials will have taken place at this site.

A finding of particular anthropological interest is represented by the discovery of a cemetery on the site of the yard of the house Wallonerberg 5, rebuilt in 1995/1996.[40] The excavations became necessary, as the premises, located opposite the deeply incised Wallonerberg and partly elevated over 3 m, were to be lowered for the construction of an underground car park. From 1694 until the beginning of the nineteenth century, this area had been the burial site of the Wallonic Reformed parish. After having been forced to flee their homes in the course of the French king Louis XIV's abolishment of the Nantes Edict of Tolerance in 1685, they began to constitute an autonomous political structure in the then still rather devastated town of Magdeburg, moreover at first also representing a genetically isolated population. In the course of the excavations, a limited area of less than 70 m² yielded a documented number of more than 130 graves. They were arranged in several tiers, with partial differences in height of up to 3 m, thus making it impossible to salvage all of the burials. Moreover, extraordinary large amounts of organic rests, such as hair, cloth or the padding material of coffins, but also insect pupae were contained in the graves. – All this material still awaits an anthropological processing which could also provide important contributions towards an elucidation of the town history (i.e. palaeopathology, life expectancy, dietary habits, etc.).

Surveys in the vicinity of the high-medieval old town: fortifications and suburbs

The spatial development of Magdeburg is characterised by the fact that the area of the old town – aside from small corrections at the Krökentor town gate and in the Elbe-foreland – practically did not change from the beginning of the thirteenth century until after the war in 1870/1871. Up until the destruction in 1631 the suburbs of Neustadt and Sudenburg lay immediately outside the town gates; belonging to Brandenburg since 1680 and expanded into becoming Prussia's strongest fortress especially in the course of the eighteenth century, the area of fortifications was to exceed the actually fortified area of the town by far. The suburbs had to make way at first for the walls and ramparts of the fortress, then to provide free fields of fire before the stronghold, resulting in the Sudenburg moving further and further south and the Neustadt towards the north. This process became most markedly manifested in the Napoleonic era in the complete relocation of the Sudenburg to the location of today's Halberstädter Straße and the large-scale destruction of the (old) Neustadt and the rebuilding of a (new) Neustadt on the Lübecker Straße.

40 Rathje/Weber 2005.

Fig. 15. Magdeburg – Walther-Rathenau-Straße, Fakultät für Informatik. Trench containing the remains of medieval copper- and copper alloy manufacture during the rescue excavation

These circumstances must therefore be taken into consideration when construction in the vicinity of today's town centre outside of the former medieval centre is to be conservationally accompanied. Naturally, in such an area characterised by the building of fortifications, Gründerzeit-era urban expansion and modern traffic constructions (train tracks, motorways), conditions for any survival of medieval findings are especially unfavourable, with the destruction through bombing raids in the course of World War II further contributing to the loss of building fabric. And yet, the meticulous accompanying of excavations in the areas mentioned, surrounding the historical old town in a belt ca. 1,000 m wide, demonstrates that findings worthy of documentation have indeed survived (thereby explicitly excluding the cellars of Gründerzeit buildings destroyed in the War).

Mention has already been made of the fact that surveys undertaken on the Friedensplatz yielded findings dating back to the time of the tenth/eleventh centuries. Unfortunately, the graves underneath the Gesellschaftshaus in the Klosterbergegarten[41] cannot yet be securely dated, while skeletal finds in the Glacis parkways to the east of the Magdeburg Ring on the Editharing, in front of the former excavation office of the Landesamt für Denkmalpflege und Archäologie (state department for conservation and

41 Engel 2005.

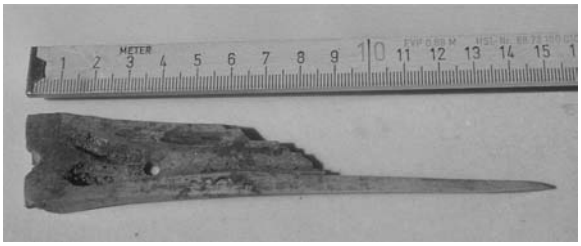

Fig. 16. Magdeburg – Walther-Rathenau-Straße, Fakultät für Informatik. A bone comb discoloured by green copper salts

archaeology) on the Editharing 2, moreover in one of the front gardens in the Richard-Wagner-Straße, probably belong to one of the Baroque-age "paupers' cemeteries", formerly located within the area of the fortifications. Settlement findings – including ceramics from the time between the tenth century until the early modern age – were unearthed in the front garden of the Ökumenisches Domgymnasium (Hegelstr. 5) together with an early modern find in the form of a well projecting into the Rotliegende (Upper Permian) of the rock foundation of the Dom underneath the building of the Landeszentralbank, to the west of the Kulturhistorisches Museum (museum for cultural history).[42] It was possible to date its filling to the sixteenth century due to a multitude of green-glazed stove tiles.

Similarly, outside of the medieval (old) town – in the southern part of the medieval Old New Town (Alte Neustadt) – on the building site of the Fakultät für Informatik of the Otto-von-Guericke-Universität on the Walther-Rathenau-Straße, apart from a segment of the Baroque battlement, a trench running from the north-west to the south-east had been constructed, standing out in the northern profile of the foundation pit and its spit (Fig. 15). Its filling can be dated to the thirteenth/fourteenth century and contained, beside dated ceramics, also non-ferrous metal slag and greenly discoloured animal bones, resp. artefacts made of bone (Fig. 16). The workshops of an artisan working with non-ferrous metals will therefore have probably been located nearby. From the heritage manager's point of view, this discovery indicated that even in an area referred to archaeologically as a "desert" (medieval settlement followed by the Baroque fortification complex and subsequently the dense Gründerzeit-development, then destroyed in 1945) the occurrence of expressive findings can still be expected.

Also of special importance are the results of archaeological research on early modern and Baroque fortification construction. Naturally, we can also today see expansive overground edifical remains from the time when Magdeburg had been Prussia's mightiest fortress. And yet, in contrast with other towns, in the eyes of the

42 Weber 1997, 28-30.

public these – as of yet – still play only a minor role.[43] Mainly they originate in the final phase of construction of the fortress, the second half of the nineteenth century. Apart from few exceptions (the Bastion Braunschweig in the former Luisengarten, the current Geschwister-Scholl-Park; Bastion Halberstadt on the Erzbergerstr.) the oldest Baroque buildings are no longer visible in today's cityscape – although this does not mean they do no longer exist. Thus, several years ago during tunnel excavations under the crossing Otto-von-Guericke-Straße and Ernst-Reuter-Allee, the late medieval/early Renaissance-age town wall under the easterly pedestrian walkway in front of No. 105 of the Otto-von-Guericke-Straße was excavated to a depth of ca. 6 m. Finally, in the year 2004, a projected tunneling in east-westerly direction of the University Square from the direction of the Walther-Rathenau-Straße led to excavations of several months' duration.[44] Among others, the Bastion Hessen (constructed between 1688 and 1709), adjacent to the site of a medieval quarry for greywacke, was hereby excavated. This had been levelled in the course an expansion of the town during the Gründerzeit – also meaning that, due to the filling, the subterranean site remained. Thus the impressive facade of the Bastion with its ornate limestone quoin (Fig. 17) only had to give way to the demands of twenty-first-century traffic.

Summary and outlook on future research

The excavations during the last few years have provided evidence for a vast amount of archaeological findings. At present, first of all efforts on the scientific processing of discoveries documented in the course of these endeavours and of the findings resulting therefrom must be increased, to actually get the material to "talk". Besides a systematic scrutiny of the archaeological remains, especially of ceramics, this includes the analysis of animal bones as direct evidence for human nutrition of that time, an ascertainment of vegetable remains, pedological research on the genesis of the find levels and, finally, a scientific dating and material scientific analysis of metal and stone utilised in construction to perhaps gain knowledge on their manufacturing technique and origin. The graves await anthropological scrutiny using employing modern processes of analysis, e.g. palaeogenetics. This task has already been begun for certain key areas of the ex-

43 In the meantime, within the scope of interested Magdeburg citizens there are initiatives to popularise this part of the historical heritage, e.g., guided tours are offered in the expanse of the conserved fortress. In 2005, the town organised an international congress on the "Preservation and use of major historic fortresses of the 19th century". The "Mark" barracks, situated in the northern part of the old town not far from the university are to be developed into a "cultural fortress". A new footpath now emanates from between the Liebknechtstraße and the Damaschkeplatz in the Künette-Graben, along the Glacis as a component of the "green belt" all around the old part of the town.

44 Ickerodt 2005.

Fig. 17. Magdeburg – Universitätsplatz. The outer point of the Bastion Hessen after its excavation in the course of the construction works for the road tunnel

cavations, e.g. the "*palatium*". And yet, compared against the multitude of possible methods of analysis, the amounts of finds, of necessity, nearly always emergenvy-excavations is practically unmanageable. Detailed analysis of this vast amount of material leads us to hope for many new conclusions.

Moreover, work on the sites proceeds. At the time this article was written (summer of 2005) the excavation works on the site of a new underground car park for the "Allee Center" shopping mall and in the area of the former Heiligegeistkirche, demolished in 1959, has been completed and the work around the monastery Unser lieben Frauen have brought ditches and sunken floor huts from the ninth and tenth centuries to light. Immediately west of the Alter Markt, the former "Marietta-Block"-area will be covered by a new commercial building: Excavations show a medieval paving of the Breiter Weg (ca. 1200). The cellar of the Haus der Romanik east of the Domplatz is be drained – and in this central area we can expect new discoveries, new mosaic stones creating a more precise picture of Magdeburg's early medieval settlement.

(translation: David Toalster)

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Micromorphology and post-Roman town research: the examples of London and Magdeburg

Richard I. Macphail, John Crowther & Jill Cruise

Introduction

The archaeological value of making investigations of urban stratigraphy at a more detailed level than can be achieved by field analysis alone, has long been recognised by geoarchaeologists.[1] The need for such an approach to address specific archaeological questions (e.g. the Dark Earth)[2] at settlement sites was identified early in the UK,[3] but did not commence systematically until the 1980s.[4] This can be contrasted to the field recording of dark earth as early as the beginning of the twentieth century.[5] Although as yet not universally applied, the employment of soil micromorphology to settlement sites is becoming a European phenomenon[6] – far more so than in the USA for example.[7]

The present authors maintain that 'microstratigraphic analysis' that uses soil micromorphology *combined* with exactly correlated and selectively employed analyses of bulk samples (see below) during such studies:

1. is more rigorous scientifically (allowing inter-disciplinary controls),
2. produces results that are more easy to interpret, and
3. is more likely to produce consensus interpretations that are sustainable and robust, compared to investigations where soil micromorphology or bulk analyses are carried out alone, or where there is poor integration between the disciplines.[8] In order to illustrate this approach, two recent site studies are given pre-eminence: the London Guildhall, UK and Magdeburg Cathedral precincts, Germany.

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1 Courty/Goldberg/Macphail 1989; Macphail/Cruise 2000.
2 Biddle/Hudson/Heighway 1973.
3 Cornwall 1953; Dalrymple, 1958.
4 Macphail 1981; 1983.
5 Norman/Reader 1912.
6 Cammas/David/Guyard 1996; Cremaschi 1992; Guyard 2003; Henning/Macphail 2004; Rentzel 1998.
7 Goldberg/Macphail 2006.
8 Macphail/Crowther 2004b; Macphail/Cruise 2001; Macphail/Crowther/Acott/Bell/Cruise 2003; Macphail/Cruise/Allen/Linderholm/Reynolds 2004.

The sites and samples studied

The London Guildhall, London, UK

The discovery of London's Roman amphitheatre beneath the medieval and 'modern' London Guildhall, led to a long period of rescue excavations by the Museum of London Archaeological Service (MoLAS) from the late 1980s, in order to both establish underground car parks and preserve the amphitheatre.[9] This was mainly funded through the Corporation of London. The microstratigraphic investigation, which combined soil micromorphology, bulk analyses and palynology, went through an assessment process that allowed a preliminary interpretation of a site that included Roman levels, dark earth and early medieval archaeology.[10] It can be noted here that both the archaeological potential – for example, the moist and humic early medieval levels preserved pollen – and numerous academic questions posed by the site necessitated a large amount of background research to be carried out. This included experimental studies.[11]

This paper focuses on the early medieval levels.[12] The investigation of the early medieval archaeology comprised – Period 9: Post-dark earth to AD 1050; Period 10: AD 1050-1140[13]; and Period 11: AD 1140-1230. Monolith and bulk samples, and subsampled monoliths, provided 50 thin sections[14], 48 bulk samples[15] and 31 pollen samples[16]. The analysed samples approximate to one third of the samples actually taken, and which were selected after the assessment of 1995. It can be noted that 107 layers were described and counted from the thin sections.

Magdeburg Cathedral precincts, Germany

The Magdeburg Cathedral precincts site was visited and sampled by Macphail on the 4th of July, 2003, with Dr Astrid Schweizer and Professor Dr Joachim Henning.[17] The local area had undergone a series of excavations by Drs Rainer Kuhn and Thomas

9 Bateman 1997.
10 *Idem* 2000; Macphail/Cruise 1995.
11 Cruise/Macphail 2000; Macphail/Cruise/Allen/Linderholm/Reynolds 2004.
12 The Roman and Roman dark earth deposits are fully reported in Macphail/Crowther/Cruise submitted 2003a.
13 Dendrochronology of coffins in on-site cemetery; Church of St Lawrence.
14 Macphail: soil micromorphology, microprobe.
15 Crowther: chemistry.
16 Cruise: palynology.
17 Institut für Archäologische Wissenschaften, Vor- und Frühgeschichte, Johann Wolfgang Goethe-Universität Frankfurt am Main.

Weber,[18] and the present geoarchaeological investigation[19] was carried out within this context. The focus of the study was to examine the microstratigraphy of the Ottonian[20] 'floors', other post-Ottonian medieval floors and the twelfth-thirteenth century post-Ottonian church stratigraphy where bronze bell making was suspected, in an area that became the AD 1363 Cathedral's New Market area. The small study therefore examined three locations and periods within the excavation. In addition, sampling encompassed the top of the relict Bronze Age levels, which had been exposed by medieval construction works. Seven thin sections (13 layers described and counted) and four bulk analyses were carried out.

The microstratigraphic approach

Before applying such time-consuming microstratigraphic techniques to archaeological sites it is absolutely crucial that the value of such investigations is appreciated. In the context of early town studies the following questions can therefore be posed:
How can microstratigraphic analysis (soil micromorphology, chemistry and microfossil) help address historical and archaeological issues concerning towns, trade and industry? At the site level, possible questions are:
a: What are the archaeological deposits composed of?
b: What was the use of space?
c: What is the history of the sequence?

In London the major questions were:
a: Did the early medieval deposits accumulate because turf was a building material (timber buildings)?
b: Can different use of structures be identified?
c: What was the relationship of this settlement to the surrounding countryside, and the developing post-Roman city of London?

In Magdeburg the major questions were:
a: What is the nature of the deposits and possible mortar surfaces of the Ottonian church?
b: What was the use of space between the disuse of the Ottonian church between the early eleventh century and the New Market of the fourteenth century Cathedral?
c: Is there any evidence of bell making in the thirteenth century levels?

18 Landesamt für Archäologie Sachsen-Anhalt.
19 Sponsored by Johann Wolfgang Goethe-Universität Frankfurt am Main.
20 Tenth century; Ludowici phase I.

Methods

The soil micromorphology and bulk analytical methods applied to the London Guildhall and Magdeburg Cathedral precincts were identical. Whilst the deposits were unfortunately too oxidised to preserve pollen at Magdeburg,[21] moist, humic conditions allied to high amounts of phosphate in the early medieval levels at the London Guildhall unexpectedly allowed palynology to be a major component of their study. Full details of the methods applied are given elsewhere.[22] Essentially, soil micromorphology,[23] which included microprobe (X-ray) analysis,[24] was combined with the bulk measurements of loss-on-ignition (LOI), fractionated phosphate (inorganic and organic P), magnetic susceptibility (including $\%\chi_{conv}$) and the heavy metals copper (Cu), lead (Pb) and zinc (Zn).[25]

Results and conclusions

The London Guildhall

The large database at the London Guildhall permitted the use of Pearson product moment correlation coefficients to examine the relationships between the various properties analysed, and analysis of variance (using the Scheffé procedure) has been used to compare the mean values for individual groupings of soil microfacies types (SMTs). Analysis of variance was only undertaken on groupings with ≥4 samples. In cases where the data for individual properties had a skewness value of ≥1.0, a $\log_{10}$ transformation has been applied in order to increase the parametricity. Statistical significance was assessed at $\alpha = 0.05$ (i.e. 95 % confidence level).

Twenty-two soil microfacies types (SMTs) and subtypes were identified on the basis of the soil micromorphology, microchemistry, chemistry, magnetic susceptibility (χ) and palynology. Three important examples are given in Table 1. In brief, the use of local subsoils as a building 'clay' was identified from on-site soil studies and long-term investigations of Roman building materials in London.[26] Animal dung was also commonly employed to line wattle walls, embed wall stakes and to line surfaces below brickearth clay floors (Table 1, SMT 1). Cattle dung was identified from reference ma-

21 Astrid Schweizer, pers. comm.
22 Macphail/Crowther 2004a; Macphail/Crowther/Cruise submitted 2003b.
23 Courty/Goldberg/Macphail 1989; Stoops 2003.
24 Macphail/Cruise 2001.
25 Bethell/Máté 1989; Crowther 2003; Crowther/Barker 1995.
26 Macphail 2003.

terial collected from Butser Ancient Farm (1975-1990; 1992-present),[27] where different house floor deposits had been investigated.[28] This permitted, for example, the clear differentiation between houses used for stabling (SMT 5) and those utilised for domestic activity (SMT 7), and models based upon this research have been employed across Europe.[29] Plate 20 illustrates some of the combined analyses: typical phosphate and pollen-rich layered stabling refuse (Pl. 20.a); an example of a possible pig coprolite where cereal pollen is particularly high (Pl. 20.b); the junction between a trampled domestic occupation floor rich in burned organic debris that contains high amounts of copper, and an overlying floor constructed of brickearth (Pl. 20.c); and microprobe map of cess layer (that contained nematode eggs) rich in both phosphate and heavy metals (Pl. 20.d).

Such findings give clear identifications and permit wide interpretations to be made, thus:

At the London Guildhall consensus interpretations are beginning to suggest that:

1. Turf as a building material did not contribute to deposit accumulation. Often domestic floors were constructed of brickearth 'clay'. Stabling waste was ubiquitous at the site, being dumped and even utilised to line wattle walls and make 'footings' for plank walls, clay floors, etc.
2. Structures had a primary domestic or stabling use – small wattle buildings being used for animals whereas rectangular plank structures were for domestic use. Nevertheless, instances of stable floors becoming domestic space were observed, as examples of changing use of space and structures.
3. The settlement appears to be a farmstead on the edge of London, with cattle and sheep being foddered on cereals and grass hay.[30] The activity was probably related to the dairying, rather than the stabling of non-local animals for market, as the pollen from their dung is essentially 'local'.

Magdeburg Cathedral precincts, Germany

At Magdeburg, it has to be noted that the number of bulk samples analysed was very small and no background control samples were included. Thus, until more analyses are carried out the present results must be interpreted with some degree of caution. The soil micromorphology study was less limited, but again is the first analysis of this type here,

27 Reynolds 1979; Reynolds/Shaw 2000.

28 Macphail/Cruise 2001; Macphail/Cruise/Allen/Linderholm/Reynolds 2004; Macphail/Goldberg 1995.

29 Matthews/French/Lawrence/Cutler/Jones 1997.

30 Pigs were also present but probably scavenging.

and therefore some interpretations need to be considered as preliminary until more supportive investigations are carried out.

The investigative results of two contrasting sequences are shown through a table of soil micromorphology description and associated use of bulk data and microprobe examination (Table 2; Pl. 21.a-f). For example, the mortar floors or mortar debris spreads associated with the Ottonian Church (sample M4) were succeeded by 'domestic' trampled/beaten floor soil deposits, both of which were affected by frost action that produced horizontal fissuring (Pl. 21.a-b). The thirteenth century location that became the New Market was an exterior area that was used for general middening, and here there is clear metallurgical evidence of bell making – high tin, low lead bronze casting droplets typical of bell manufacture. The integrated study also led to these very preliminary overall suggestions:

1. There are a series of Ottonian mortar 'surfaces' with 'beaten floor' deposits formed from trampled-in local soils (Pl. 21.a-b). The mortar surfaces are composed of limestone aggregates, which either had mortar poured over them or, just as likely, are simply layers of constructional waste. One layer was broken up by frost. Most of the occupation surfaces include constructional fragments, including clay,[31] and anthropogenic materials such as bone and latrine waste.
2. A biologically-worked dark earth soil formed over the abandoned Ottonian church site, and developed into an open space where stock and middening activity is recorded.
3. There is clear evidence of bronze metal casting being undertaken, the chemistry of the bronze indicating its most likely use was for bell manufacture (Pl. 21.c-f).[32]

Acknowledgements

The authors wish to acknowledge funding by MoLAS and Corporation of London, and the University of Frankfurt am Main. Many of our co-workers have already been mentioned, but we would like, in particular to thank Joachim Henning for encouraging us to bring our methods to Germany and for inviting us to take part in the Conference on 'Post-Roman Towns' at Bad Homburg.

31 Possibly relict of clay floors or unfired loom weights.

32 Bronze metal casting droplets were kindly identified by Thilo Rehren, Institute of Archaeology, UCL.

Table 1: London Guildhall – microstratigraphic analysis employing soil micromorphology, chemistry and palynology, and the classification of soil microfacies types (SMT) that led to identification and interpretation of site contexts. The examples of brickearth building material – floors (SMT 1d), stabling refuse (SMT 5a) and domestic beaten floor deposits (7a).

Facies (SMT) (examples of samples and contexts)	Micromorphology and microprobe	Chemistry	Palynology	Identifications and interpretations
SMT 1d {753a} {756} {820} {821} {979-1} See Pl. 20.c	Similar to SMT 1a (natural brickearth soils), a non-calcareous fine sandy silt loam brickearth, with coarse patches of very abundant well oriented clay coatings and infills (not right-way-up) of Bt horizon; rare examples of patches of micritic impregnation/relic calcareous subsoil, very few flint; occasional secondary amorphous phosphate and vivianite; material can become rubefied in/near hearths.	Very low to moderately high LOI (range, 1.20-6.78 %, *n*=5). Generally non-calcareous (maximum, 2 %). Little (uncontaminated 'raw' material) to clear indications of phosphate (phosphate-P, range = 1.20-7.12 mg g^{-1}). Some samples show possible heavy metal enrichment. No χ enhancement in some samples, but clear enhancement in others (reflecting either *in situ* burning or the incorporation of burnt minerogenic material from elsewhere).	n.d.	Brickearth floor slab or building pad (Periods 10 and 11): This is a raw building material quarried locally from the subsoil (Bt) and weathered parent material horizon (Ct) of argillic brown earth (brickearth) soils, formed in river terrace drift under woodland (clay coatings). Use of overlying surface, and the fact that the brickearth acts as a hydraulic barrier, can lead to secondary phosphate contamination in places. Fragments and rubefied (burned) fragments can be ubiquitous inclusions in other MFTs.

Facies (SMT) (examples of samples and contexts)	Micromorphology and microprobe	Chemistry	Palynology	Identifications and interpretations
SMT 5a {251} {687} {755} {977} {978} See Pl. 20.a and 20.b	Very dominantly organic, with a) intact horizontally layered Poaceae tissues, commonly with abundant phytoliths and long articulated phytoliths; b) sometimes with dark brown humified plant material; c) intercalated with silt, autofluorescent under blue light, layered Ca, P and K distribution (probe); d) sometimes inclusions of amorphous organic matter with calcium oxalate crystals and Ca/P/K chemistry (probe); commonly limpid brown, speckled brown to dark brown/blackish (PPL), isotic, with rare scatter of high interference colours (isotic or crystallitic, XPL), very dark brown to black (OIL); very abundant plant organs and tissues, with rare pollen, diatoms and ash; wood may occur; very few burrows and excrements.	SMT 5a/b/c: moderate to very high LOI (range, 10.3-43.4 %, n=13). Mostly non-calcareous (maximum, 2% carbonate). Clear to strong indications of phosphate (phosphate-P, range = 5.79-20.7 mg g^{-1}), and possible to strong evidence of heavy metal enrichment (especially Pb and Cu). No χ enhancement in some samples, but possible to strong enhancement in others.	High concentrations of well-preserved, dominantly cereal t. and Poaceae pollen. Samples with >30 % grass (see Pl. 20.a) should be viewed as relatively undiluted stabling refuse, with major inputs from animal feed, bedding and dung. Samples with <30 % grass contain very high amounts of cereal t., possibly as special feed ('pig' coprolite association) (Pl. 20.b). Rare concentrations of woody pollen probably indicative of construction. Weed assemblage probably indicates 'local' animal husbandry.	Well-preserved highly organic stabling refuse (Periods 10 and 11), with a) fodder and bedding, b) dung of herbivores (cattle better preserved than sheep/goat), c) stabling floor crust, and d) omnivore (pig) dung. These deposits have been very little biologically worked before or after dumping. Also this material includes 'raw' dung being used for lining wattle walls or to support and level (?) floor foundations. (It can be noted that there is also a strong statistical correlation between LOI and phosphate-P, showing phosphate enrichment is due to animal husbandry represented by SMT 5. There is also strong evidence of the link between phosphate-P and heavy metal concentrations.)

Facies (SMT) (examples of samples and contexts)	Micromorphology and microprobe	Chemistry	Palynology	Identifications and interpretations
SMT 7a {755} {756} {976} {979} See Pl. 20.c	Massive, compact, with weak laminae and composed of (often well-sorted) sand, silt and fine granules of brickearth, charcoal, burned soil, organic fragments, eggshell, bone and coprolite; the matrix often includes phytoliths and ash crystals as well as patches of ash (crystallitic b-fabric); occasional burrows and biogenic granules are present.	SMT 7a/d/f: Low to high LOI (range, 2.50-17.0 %, *n*=9). Some samples non-calcareous, whereas others calcareous (maximum, 5% carbonate). Clear to strong indications of phosphate enrichment (phosphate-P range, 6.73-13.4 mg g^{-1}). Clear too strong heavy metal enrichment (especially Pb and Cu) in some of the samples. No too strong χ. enhancement, the latter reflecting either *in situ* burning or the incorporation of burnt minerogenic material from elsewhere.	(SMT 7b/c/d/e: Low pollen concentrations and relatively poor preservation but relatively diverse herbaceous pollen assemblage.	Domestic beaten floor deposits (Periods 10 and 11): These can reflect near hearth locations, and trampled inputs from food and food processing waste and occasional industrial/craft (iron working, leather working) activities. *In situ* floor sequences in buildings occur as a succession of 1d (brickearth floor) and 7a (beaten floor) layers (see Pl. 20.c).

Table 2: Magdeburg Cathedral precincts – two thin section examples: soil microstratigraphy (SM – soil micromorphology; Microprobe; BD – bulk data). M1b – bell making evidence in what became the New Market; M4 – Mortar floors/mortar debris spreads associated with the construction/repairs of the Ottonian Church, and associated trampled (beaten) floor deposits; all of which were affected by contemporaneous frost action.

Material	Sample Number examples	Sampling depth, Soil Micromorphology (SM), microprobe and Bulk Data (BD)	Phase, interpretation and comments
Soil Microfabric 1/ Microfacies A2	M1b upper	54.05-54.00 m SM: Homogeneous; *Structure*: massive with moderately well formed planar voids; compact with 25 % voids; common thin (150 µm) straight edge horizontally oriented planar voids (some containing articulated phytoliths up to 1 mm long) and complex packing voids and chambers (max. 10 mm); *Coarse Mineral*: as M1b lower, but only very few gravel; *Coarse Organic/Anthropogenic*: abundant fine and coarse (max. 3 mm) charcoal, occasional monocotyledonous plant remains, rare bone and mortar, trace amounts of burned eggshell, coprolites, dung, building clay? (imported clay loam?), and 2 coarse (3-3.5 mm) probable corroding high tin (dendritic structure) bronze (microprobe/map: Cu and Sn) metal cast droplets fragments (opaque, green and red [PPL], isotropic with edges showing moderately high interference colours – green stained/calcitic? [XPL]; metallic grey (Cu-Sn bronze), metallic red (dominantly Cu) with green edges (Cu staining) [OIL]; micritic calcite formation around the fragments are stained with Cu); a single sand-size example of likely copper slag (part red [CuO] vesicular fragment) *Fine fabric*: as SMT 1, with rare phytoliths and possible trace amounts of diatoms; rare fine root traces with rare woody/lignin root remains – root traces up to 10 mm diameter; *Pedofeatures*: *Crystalline*: rare calcite medium root pseudomorphs, in occasional areas of micritic impregnation/weak cementation, e.g. around bronze slag; *Amorphous*: traces of ferruginised plant/dung; *Fabric*: many very broad (e.g. 5 mm) burrows; *Excrements*: rare traces of very thin organic excrements in root channels. Microprobe (selected): *Sediment* (mean, *n*=84) – 2.73 % CaO, 1.52 % Al_2O_3, 18.07 % SiO_2, 3.67 % CuO, 1.50 % SnO_2, 0.09 % PbO and 0.01 % ZnO; *upper bronze slag fragment* (mean, *n*=4) – 0.54 % CaO, 0.28 % Al_2O_3, 5.93 % SiO_2, 43.64 % CuO, 12.98 % SnO_2, 0.44 % PbO and 0.0 % ZnO; *lower bronze slag fragment* (mean, *n*=4) – 0.65 % CaO, 0.17 % Al_2O_3, 2.36 % SiO_2, 29.27 % CuO, 17.77 % SnO_2, 0.97 % PbO and 0.0 % ZnO; BD: 2.62 % LOI, χ= 113 (10^{-8} SI), 31.0 % χ_{conv}, 2.25 mg g^{-1} phosphate-P, 156 µg g^{-1} Pb, 40.8 µg g^{-1} Zn and 441 µg g^{-1} Cu.	Profile 54 Area 550 Context 661: thirteenth century level of bronze bells Massive and semi-layered ashy occupation sand with horizontally oriented planar voids/plant traces, rich in charcoal and including corroding bronze casting droplets and 'stained' by copper. Localised fine root growth and weathering, with post-site woody vegetation growth? Bulk data indications of burning (χ_{conv}) and copper enrichment. *Trampled occupation deposit containing food (bone, eggshell), hearth (charcoal, ashes) and industrial (corroding bronze casting droplets - microprobe) debris.*

Material	Sample Number examples	Sampling depth, Soil Micromorphology (SM), Bulk Data (BD)	Phase, interpretation and comments
Soil microfabric 3c (and 4)/ Microfacies C1b	M4 M4 upper	53.77-53.69 m SM: 53.77-53.72 m: - mortar floor: as C1b (M2a) – coarsely fragmented (horizontal fissuring?) mortar of limestone and fine matrix SMT 3c; with rare charcoal, traces of bone and coprolite; very abundant dusty and impure capping and infills; very abundant fabric fissuring; very broad burrows containing broad to very broad (2-4 mm) organo-mineral excrements of calcitic and non-calcitic silty SMT 4.	*1344/962(1315):* Ottonian floor deposit over mortar floor/mortar debris spread *Biologically fragmented crushed limestone mortar floor/mortar debris spread (affected by frost?).*
Soil Microfabric 4/ Microfacies D1	M4 lower	53.72-53.69 m: – occupation: Mainly homogeneous (with coarse mortar floor fragment and beaten floor deposit); *Structure*: massive with horizontal fissuring; compact with 20 % voids – horizontal fine (150 µm) fissures/planar voids; *Coarse mineral*: C:F 60:40 (excluding 15 mm fragment(s) of mortar floor), moderately well-sorted coarse silt-fine sand-size quartz, quartzite, feldspar with opaques, glauconite and micas; *Coarse Organic/Anthropogenic*: rare coarse (2.5 mm) charcoal, example of red burned mineral material (2 mm), trace amounts of fine sand size bone, burned bone and coprolitic material; possible fine ashes; *Fine fabric*: non-calcareous and calcitic humic and fine charcoal-rich SMT 4 (but with textural features – see below); *Pedofeatures*: *Textural*: occasional fine intercalations, with an example of 300 µm wide 0.5 mm long dusty clay infill; *Amorphous*: rare traces of yellowish phosphate? staining/impregnation. BD: 2.31 % LOI, χ= 62.5 (10^{-8} SI), 23.9 % χ_{conv}, 4.22 mg g^{-1} phosphate-P, 24.6 µg g^{-1} Pb, 33.5 µg g^{-1} Zn and 7.8 µg g^{-1} Cu.	Well-preserved horizontally fissured beaten floor deposit with traces of coprolite and amorphous phosphate (staining – see moderately high phosphate-P), with very finely fragmented humus (LOI), charcoal and burned debris (enhanced χ_{conv}). *Rapidly sealed beaten floor of likely domestic use, and trampling-in of local natural soils (later effected by frost?).*

Captions for plate 20 (see colour plates at the end of this volume)

a-d: Examples of soil micromorphology and microprobe from early medieval London Guildhall.

a: Stabling refuse: photomicrograph of London Guildhall sample 897-2b (OA138); detail of intact fragment of phosphate-rich stabling crust (layered monocotyledonous plant fragments [straw?] and their long articulated phytoliths) mixed with other finely fragmented stabling refuse, alongside charred organic matter and mineral (sand and silt inclusions) (cereal pollen-rich SMT 5b; 200,000 grains cm-3, <30% Poaceae and >70% Cereal t.). (Width is ~0.64 mm; Plane polarised light – PPL)
b: Stabling refuse: photomicrograph of London Guildhall sample 897-1a (OA138); detail of amorphous organic coprolite containing numerous embedded plant (monocotyledonous) fragments that is identified as omnivore (pig?) dung, in a layer containing extremely high cereal t. pollen (45-75%). (Width is 3.65 mm; PPL)
c: House floors: photomicrograph of London Guildhall sample 753 (B100) – detail of junction between the overlying minerogenic brickearth floor (SMT 1d; fine sandy silt loam, 2.77% LOI) that shows no enrichment of phosphate or heavy metals, and an underlying organic-rich beaten floor (SMT 7f; trampled, sub-horizontal laminated charcoal and biologically worked silt-rich stabling refuse, 17.0% LOI) that demonstrates clear indications of phosphate (phosphate P=9.08 mg g 1) and heavy metal enrichment (especially Cu, which is exceptionally high; Cu=289 µg g 1). (Width is ~6.4 mm; plane polarised light – PPL)
d: Human cess: microprobe elemental map of London Guildhall sample 977-1 (OA117), showing calcium phosphate (Ca-P – 'blue') cemented layer of human cess (SMT 10); sand and gravel (Si) is 'red' and a large fragment of burned brickearth daub is also present as 'purple' (Ca-Si); quantitative microprobe analysis found 0.025% Si, 6.57% P, 22.0% Ca – mean values; bulk analysis of the overlying human cess layer measured high LOI (28.0%), exceptionally high phosphate-P concentration (phosphate-P=52.6 mg g 1), strong heavy metal enrichment, especially Zn (which is exceptionally high; Zn=468 µg g 1,) and Cu (Cu=222 µg g 1 Cu); no χ enhancement was recorded.

Captions for plate 21 (see colour plates at the end of this volume)

a-f: Examples of soil micromorphology and microprobe from early medieval Magdeburg

a: Magdeburg; tenth century Ottonian levels: scan of thin section sample M4; occupation surfaces including dark beaten (trampled floors) and mortar surfaces/floors; horizontal fissures could be the result of frost action. (Width is 50 mm)
b: Magdeburg tenth century Ottonian levels: M4: photomicrograph of horizontally fissured ('frost' lenticular structure) mortar floor composed of limestone and a crushed limestone lime-based matrix. (PPL, frame width is ~5.5 mm)
c: Magdeburg twelfth-thirteenth century levels: M1b: microprobe elemental map showing of two bronze (B) metal droplets containing copper (Cu) and lead (Pb); copper corrosion products (copper salts) can be seen contaminating the deposit, which is calcareous with ash and also includes a fragment of limestone (L)
d: Magdeburg twelfth-thirteenth century levels: M1b: microprobe elemental map of high tin bronze (Sn – tin; Cu – copper) metal droplet, showing copper corrosion products; likely evidence of bronze bell casting
e: Magdeburg twelfth-thirteenth century levels: M1b: photomicrograph of high tin bronze droplet showing staining of ashy matrix by green copper salts. (PPL, frame width is ~4.4 mm)
f: As 21.e, under oblique incident light (OIL); whitish grey areas are high tin bronze; red and green areas are copper corrosion products (see 21.c).

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Karlburg am Main (Bavaria) and its role as a local centre in the late Merovingian and Ottonian periods

Peter Ettel

The early medieval city of Karlburg, today part of the town of Karlstadt, is situated about 25 km from Würzburg on the left bank of the Main River Valley. The valley widens here to a shallow basin with mountain chains to the west and south (Figs 1.1 and 2.1). Karlburg belonged to the initial endowment of the episcopate of Würzburg, which was founded by Boniface in 741-42. There are two charters marking out donations to this foundation. In one charter, as the deed of donation of the episcopate of Würzburg describes, the Carolingian majordomo Carloman gave the cloister – *monasterium St. Mariae in villa Karloburgo* (cloister of St Mary in Karlburg) – to the episcopate. In 751-753 King Pippin granted the castle and the royal court (*castellum cum fisco regali*) of Karlburg to Burchard, the first archbishop of Würzburg, perhaps for his role in securing the pope's approval of Pippin's coronation.[1]

The topography of the castle of Karlburg on a hilltop with the settlement in the valley below is well-situated for traffic and trade in the Frankish settlement on the Main.[2] The Main River offered connections to the south, north and west to the centres of the Carolingian empire. The Karlburg fortification, 25 km from the Würzburg episcopate, was founded in 741-742, the former residence of Duke Heden. Two river crossings, one below the castle and the other one in the settlement itself, connected the regions of Wern and Grabfeld, which had a high density of settlement since Merovingian times.

Our sources show that Karlburg was an important local centre in the early medieval history of Mainfranken. The excavations carried out during the 1970s and 1990s and again in 2002 and 2003 of the castle and the associated settlement in the valley with its

1 The deed of donation of the episcopate Würzburg: Louis the Pious (MB 28a, 11), Louis the German (MGH DD Ludowici Germanici Nr. 41) and Arnulf (MGH DD Arnulfi Nr. 67) and the *Vita Burkardi* (F. J. Bendel/J. Schmitt, *Vita sancti Burkardi Episcopi Wirziburgensis* II. Würzburger Diözesan Geschichtsblätter 48, 1986, 19-89; Ettel 2001, 32-34; Daul 1961; Bosl 1969, 19-20; most recently, Rödel 2001).

2 Ettel 1996; *idem* 2000.

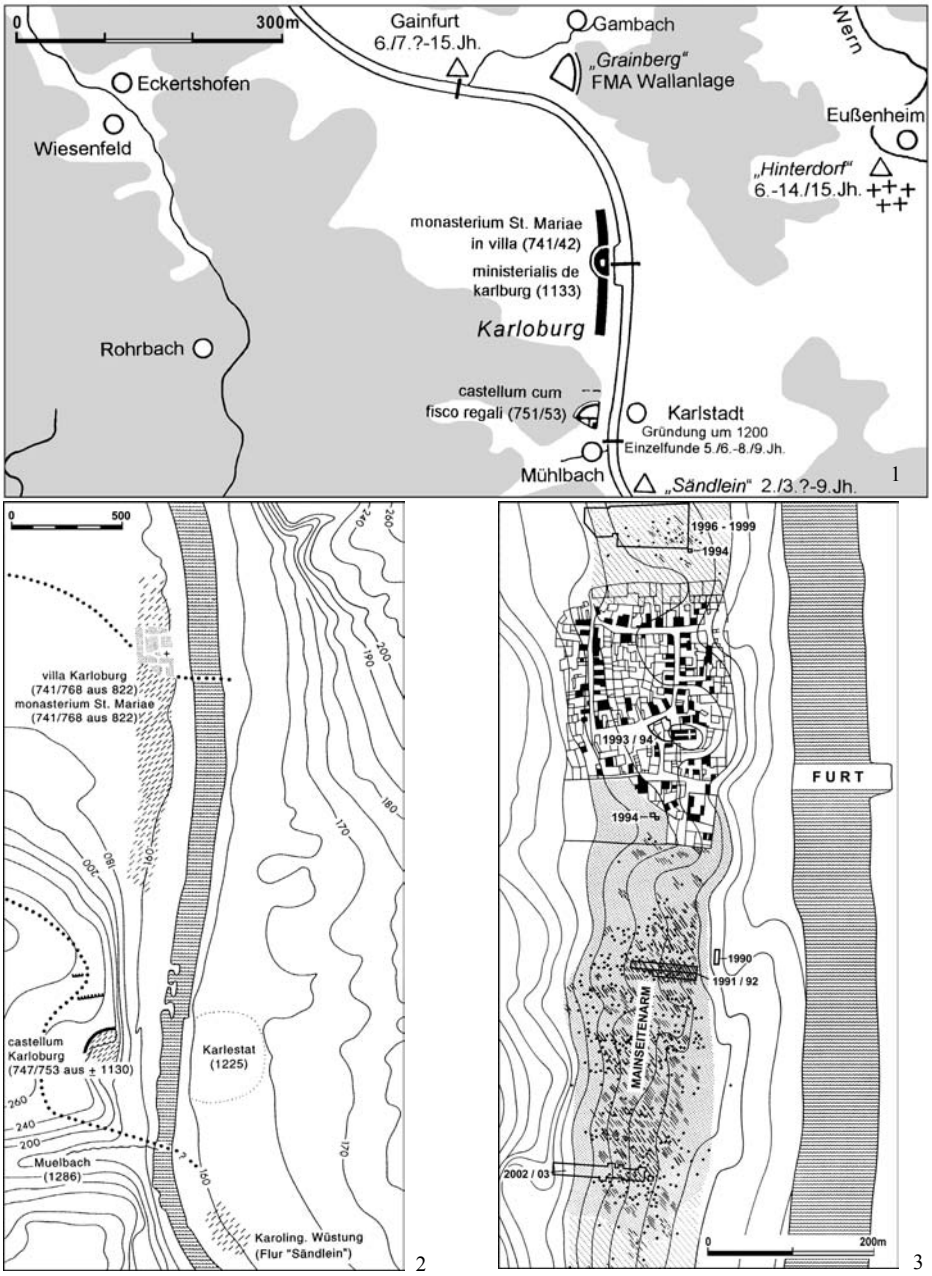

Fig. 1. 1. Archaeological-historical topography of the surrounding area of Karlburg with castle and settlement in the valley (height over 250 m above sea-level: grey screen); 2. *castellum* Karloburg and *villa* Karloburg with cloister St Mary; 3. The former extension of the *villa* Karloburg can be seen on the map with the results of the surveys (pottery: hatching; metal finds: points)

cloister,[3] together with surveys in the surrounding area,[4] deepened our knowledge and provided us with information about its development from the eleventh century until its end in the thirteenth century (Figs 1.2 and 3).

Castellum Karloburg – The excavations of 1971-1972, 1974-1975 and 1994

According to the written sources, a royal castle existed in Karlburg in the time between 741-742 and 750-751; King Pippin gave it to Burchard, the first archbishop of Würzburg, in 751-753. It is unclear if the castle was only built in Carolingian times, perhaps in the reign of Charles Martel, or already in late Merovingian times, under the rule of the dukes of Hedene as is the case with Würzburg or Hammelburg.[5] So far archaeological investigations have also failed to answer this question.
The suffix "-burg"[6], which suggests the early existence of the castle, combined with the settlement in the valley with clear Frankish evidence, make it likely that the castle dates from the late Merovingian period. Up to now there have been no finds from the castle of Karlburg dating from this period,[7] and therefore a late Merovingian fortification is hypothetical.

But we know of late Merovingian finds from a fortification on top of the Grainberg (Figs 1.1 and 2.1) on the other side of the river basin, about 1.6 km from the castle of Karlburg.[8] These finds point towards the existence of a hillfort, perhaps a refuge for the inhabitants of the royal court of Karlburg in the valley. Karlburg itself was probably unfortified at this time, according to the evidence of the archaeological excavations at this site and at similar settlements in other regions.[9]

We know more about the Carolingian fortification Karlburg Phase A from the early episcopate's time, from aerial photographs and a trial section from 1994.[10] The inside

3 K. Schwarz carried out excavations in the 1970s in the castle with financial support by the DFG (=Deutsche Forschungsgemeinschaft, Jahresbericht für Bayerische Bodendenkmalpflege 11/12, 1970/1972 (1977), 218 *ibid*. 15/16, 1974/1975 (1977) 250; Schwarz 1975, 392. 402-403, 407), 1994 the author and L. Wamser (Bayerisches Landesamt für Denkmalpflege, Außenstelle Würzburg) carried out another excavation (Wamser 1991; Ettel/Rödel 1992; Wamser 1992a; Ettel/Wamser 1994). The excavation in the settlement in the valley were carried out by the Bayerisches Landesamt für Denkmalpflege in cooperation with the author (Ettel 1998b, *idem* 2001; Ettel/Grabolle 2003; Ettel 2004)

4 Archäologische Arbeitsgemeinschaft Karlstadt, especially M. Möbius and R. Obst.

5 Weidemann 1975, 107; Wamser 1983; Brachmann 1993, 65.; *idem* 1999; Würzburg: Wamser 1992b.

6 Emmerich 1957.

7 Schwarz 1975, 392.

8 Ettel 2001, Taf. 96.3

9 Emmerich 1957 54-56, for an overview of royal yards: Gockel 1970; Gauert 1965.

10 Ettel/Wamser 1994.

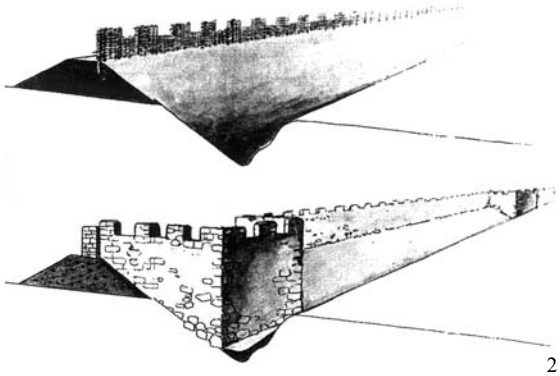

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Fig. 2. 1. Topography of the surrounding area of Karlburg with the castle and Karlstadt in the foreground, Karlburg and Grainberg in the background; 2. reconstruction of the fortification in the Ottonian phase with rampart, ditch (top) and the eleventh/twelfth century with mortar wall and towers (below)

area of the castle was 125 by 120 m, about 1.3 ha and was defended by a bow-shaped ditch, which was 5 m wide and 2 m deep (Figs 3.2 and 2.2). The ditch existed for a long time, as the layers in the profile show. Many stones on the inner side of the ditch with mortar and charcoal fragments, as well as some Carolingian pot sherds, indicate the existence of a Carolingian mortar wall, which stood primarily behind the inner line of the ditch. Therefore the fortification of Karlburg belonged to the earliest castles with mortar walls in Mainfranken and in the whole of southern Germany. A comparable castle with mortar walls from the eighth century can be found further north – for example

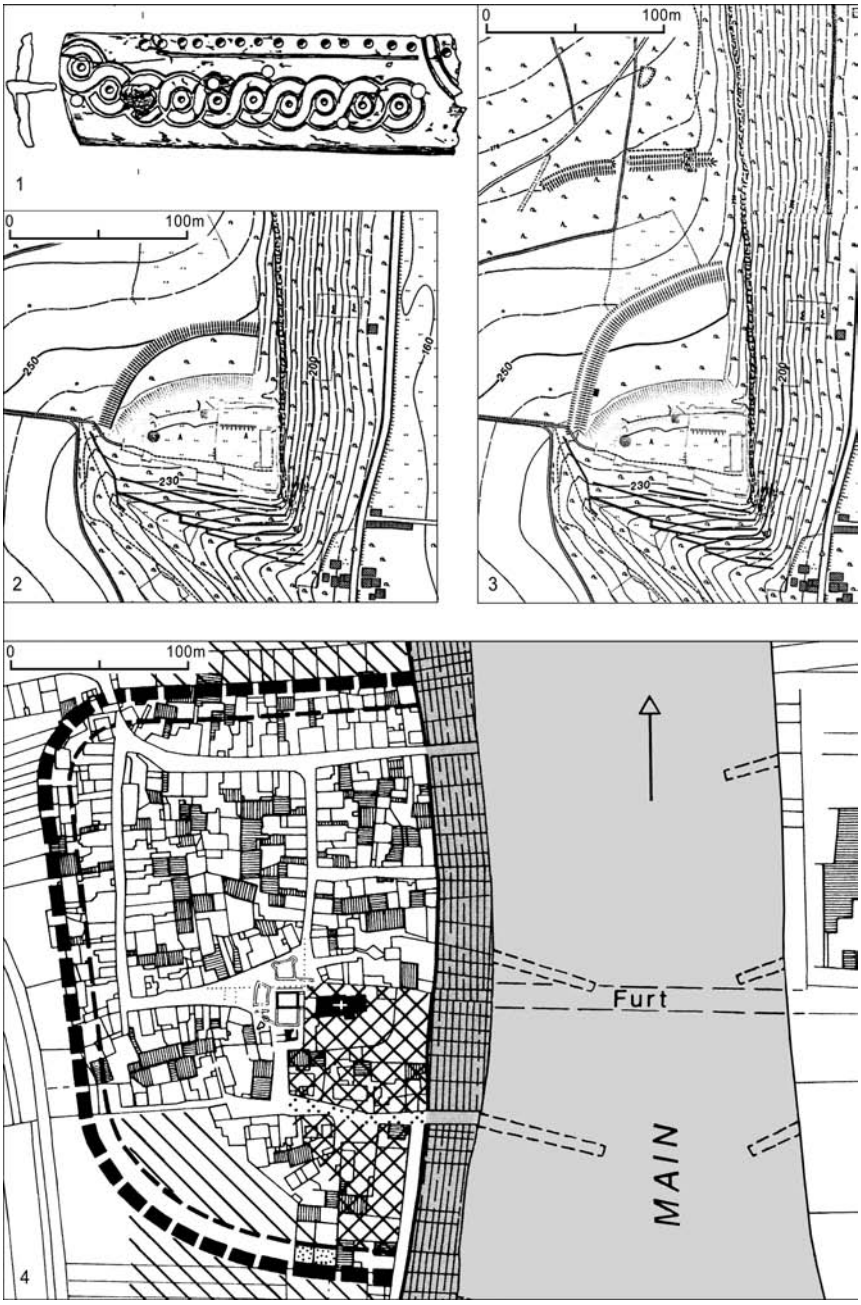

Fig. 3. 1. Decorated bone fragment from the castle Karlburg; phases of the development of the castle Karlburg in Carolingian (2) and Ottonian (3) times; 4. centre of the settlement Karlburg in the valley with the area of the cloister St Mary (cross-hatching), area for the harbour and fortification of the tenth century

the well-known fortification of Büraburg in Hesse.[11] The limited excavation inside the castle produced many postholes and pits, showing that this place was intensively used and covered with buildings. A decorated bone fragment, probably early medieval and perhaps from a casket (Fig. 3.1), indicates the presence of a group with a higher social status in the castle.[12]

This fortification was abandoned, the ditch was filled in and leveled, when a new, bigger fortification was built in Phase B on previously unused land in front of the old fortification (Figs 3.3 and 2.2 top). This new fortification was 170 by 120 m, and covered about 1.7 ha. The new fortification is also bow-shaped. Inside, the excavation produced several features, such as fireplaces and postholes from the wooden buildings. Behind the wall stood a house – 6.4 m x 5-5.2 m – with 6 posts, a wooden floor, a stone foundation on the west side and a hearth made of stone in the northwest corner. Pit-houses and other significant indications of craft activities known from bigger castles like Roßtal, Büraburg, the Ottonian imperial palace Tilleda or Gebesee[13] were not found in the castle of Karlburg in any phase. The castle of Roßtal near Fürth-Nürnberg covered an area of about 6 ha in Carolingian and Ottonian times and was excavated extensively in the 1970s and again in the 1990s, especially in the south-west area.[14] In the central part there was a church, and a cemetery was found outside the fortification. The inside area shows several areas of activity – craftsmen's quarterswith pithouses and workshop pits (Arbeitsgruben) and areas with wooden houses. Fences divided the areas with wooden houses into three allotments with huts for hay-storage or dwellings, granaries and perhaps stables. In Roßtal the area for the craftsmen was situated in the castle, protected by the fortification. In the castle of Karlburg, which was smaller with 1.7 ha, the situation was different: here the craft areas were below the castle in the valley-settlement, the *villa*.

The castle of Karlburg was fortified with a rampart of 9 to 10 m in width, made of stones and earth behind a ditch without a berm. This kind of fortification with a rampart combined with further barriers of smaller walls and ditches is typical of the so-called Hungarian walls like those of St. Gall in Switzerland.[15] With this information and with the finds inside the castle, we can therefore date Phase B to the time of the Hungarian invasions from the first half of the tenth century.[16] About 100 m in front of the fortification, one can see a small, bow-shaped rampart with a ditch of about 150 m in length,

11 Brachmann 1987, 200-201; Büraburg: Wand 1974, 90-108.
12 Fried 1994 , 154-155, Abb. VII, 16; Reitzenstein 1991.
13 Büraburg: Wand 1974; Tilleda: Grimm 1968; *idem* 1990; Gebesee: Donat 1996; *idem* 1999.
14 Schwarz 1975, 397-401.; Ettel 1998a; *idem* 2001, 100-153.
15 v. Uslar 1964, 161-165; Schulze 1984; Sage 1989.
16 About Phase C an D in Ettel 2001, 41-45. The last phase, Phase D, lasted until the sixteenth century; the castle was destroyed between 15 May and 3 June 1525 (Kübert 1991, 70-75.). For a description of the late medieval castle, see Piper 1912, 122-127.

which probably belonged to this phase of the fortification. The rampart is today 5.50 m wide and nearly 1 m high; the ditch is 5.50 m wide and 1.70 m deep. The construction is comparable to the big rampart with a ditch. Again 100 m in front of this line lies a further barrier with a rampart and ditch of about 40 m in length. Both barriers represent obstacles for horsemen in the area in front of the wall, like those known from other Hungarian walls like Schwanberg near Rödelsee, Weiherberg or Birg/Schäftlarn,[17] where barriers with ramparts and ditches are common.

Villa Karloburg

Below the castle, less than 1000 m away, lies the adjacent valley-settlement, the *villa Karloburg*, dated by written sources to 741-742, with the St. Mary's cloister in Karlburg (Figs 1.2; 1.3 and 2.1). From aerial photographs and surveys we know that the *villa* stretched over at least 1 km in length and 200 m in width or about 20 ha. It was partly situated north of the present village of Karlburg but mainly south of the village on a small elevated area of land between the River Main and an old branch of the Main to the west, which was dry in the early Middle Ages and used for settlement. The surface finds of the surveys indicate that the whole area of the *villa* was in use from the seventh until the thirteenth century.

Excavations in 1991-1992 and 1993-1994 in the centre of the *villa*

The excavations allow us to see the chronological position, importance, development and structure of the settlement in detail (Figs 1.3; 3.4 and 4.1). The excavations and the historical investigations revealed that the centre of the valley settlement was the area of the modern village of Karlburg, which is topographically situated in a higher position and near the ford of the Main. Some finds from excavations in the church of St. Johannes and St. Gertrud show that this area may have been used at the end of the sixth, and definitely in the seventh century. The northern and southern part beyond the modern village was also used in the seventh century. In the south, the excavations (Fig. 4.1) in the eastern part revealed an area with half-finished objects, tools, moulds, slag and pithouses. In the western part of the settlement, there are pits and postholes, which indicate stables, granaries or dwellings. Therefore the settlement seems to be divided into functional areas: an eastern part with a mainly craft function and a western

17 Schwanberg: Wamser 1986; Weiherberg: Frei/Krahe 1979, 234-239; Birg/Schäftlarn: Schwarz 1971, 222-238.

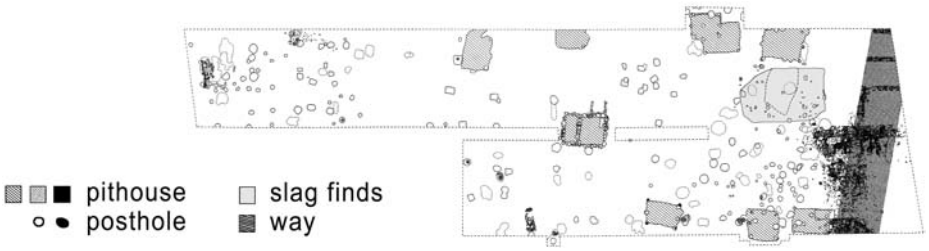

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Fig. 4. *villa Karloburg*: plans of the excavations with pithouses, postholes. 1. southern area: 1991/1992; 2. northern area: 1994 and 1996-1999; 3. southern edge: 2002-2003

part with wooden buildings, especially dwellings. This division existed from the Merovingian to the Ottonian age.

In the Carolingian period, a cloister stood in the royal court from 741-742. According to the written sources, it was under the protection of Karlburg hillfort (Fig. 3.4). The evidence suggests that the cloister area measured 150 by 45 to 80 m, and stood between the church and the southeastern edge of the late medieval village of Karlburg. To the south there are finds pointing to life in a cloister and a school that belonged to it: a fragment of a porphyry slab of Mediterranean provenance, which probably belonged to a portable altar, a gilded bronze ornament (Zierstück) with a braided decoration and inlays of red glass as a part of a reliquary or Codex cover (Fig. 5.5) and a comb fragment with incised Latin letters.[18] The present-day church, first mentioned in 1123, probably shows the continuity of the religious site since the existence of the Carolingian monastery. The date of the closing of the cloister is uncertain, but it must have existed in the first half of the ninth century.[19] Immina, the daughter of duke Heden, lived and died in this cloister. She moved from the cloister on the Marienberg in Würzburg, the castle of Heden and the later residence of the archbishop Burchard, to the Marienkloster in Karlburg. There she stayed until her death in 750 and she was buried by Burchard in this church, which according to legend was built by St. Gertrude of Neville.[20]

In the Carolingian era the harbour area measuring 400 by 75 m probably existed on the eastern edge of the centre of the valley settlement.[21] Among the finds we have imported pottery from Hesse and the Rhine area and especially *fibulae* from Frankish-Anglo-Saxon circles. Some types of *fibulae* can be seen in the context of missionary activities in the Saxon region at the Werra and the Weser near Paderborn. The cloisters of Amorbach and Neustadt am Main of the Würzburg episcopate played an important role in this missionary work.[22] The local centre of Karlburg with its workshops, under the authority of the bishop since 741-742, may well have played an active role in this missionary work. The craft activities are represented by a late Merovingian mould for producing stamped tin pendants (Pressblechanhänger)[23] and a Carolingian strap-ends (Riemenzunge), a only half-finished object (Figs 5.8 and 6). Riding equipment (Reitzubehör) and single finds, decorated in Tassilo style or a gilded bronze sword belt mount (Schwertgurtbeschlag), or a gilded coin *fibula* with a portrait of the emperor,[24] demonstrate the presence of nobles in Karlburg in the Carolingian era. The presence of

18 Ettel/Wamser 1994, 141.
19 Bigelmair 1952/1953, 1-25, esp. 4-12.
20 After *Vita Burkardi*.
21 Ettel/Wamser 1994, 141-143.
22 Wamser 1992a, 331.
23 Klein-Pfeuffer 1994.
24 Constantius II: Wamser 1992a, 322-323.

Fig. 5. Finds from *villa Karloburg*: 1-3 Brooches (scale 1:1); 4. coin *fibula*, dm. 2.35 cm; 5. gilded bronze ornament, l. 2.8 cm; 6. gilded bronze sword belt mount l. 2.7 cm; 7. half-finished object of a band, l. 9.2 cm; 8. mould for producing stamped tin pendants, dm. 3.35 cm

Immina, daughter of the last duke of Würzburg, Heden the Younger, also testifies to the existence of such a group.

From the Ottonian to the early Salian period, we have no historical reports of the *villa*. Archaeological sources show that living conditions changed little despite of the Hungarian invasions and the feuds of the nobility. However as a reaction to uncertain times, the 6 ha centre of the settlement was fortified with a ditch 7 to 8 m wide and 3 m deep and probably a simple earthen wall.[25] This happened at the same time as the castle on the hilltop was fortified with the same kind of ditch and a stone-earth wall. The finds show furthermore the widespread connections of the local centre of Karlburg, although in the Ottonian and early Salian periods, the flow of imported goods slowed in comparison with the Carolingian era. This decline in trade is related both to the uncertain times and to the decline of the Carolingian pottery centres.

The finds of the late Merovingian and Carolingian times demonstrate the predominance of Frankish goods. This can be seen not only in single finds of high quality pointing to a noble social class, but also in so-called simple mass-produced pottery (Massenware), which emerged in large quantities from the excavations in the settled area (Figs 6; 7.1 and 7.2). At first the picture is dominated by the imported pottery of the Rhine region – grey (unglazed) pottery with a rough texture and fired reduced, polished pottery from the late Merovingian period; and yellow, upper Rhineland wheel-thrown pottery from the Carolingian period from Southwestern Germany, red pottery from Hesse (especially from the Frankfurt-Region) and later Mayener pottery from the middle Rhine region (Fig. 7.1).[26] And to these Tating ware can be added (Fig. 6.14 and 7.3), which reached the Baltic and beyond.[27]

The same, and perhaps even more extensive network of trade connections is demonstrated by the metal finds, especially the *fibulae*, some of which were produced in Karlburg itself (Figs 5.1-3 and 7.3). Some *fibulae* came from the eastern Alpine region, and others show connections with the northern, Frisian-Anglo-Saxon circle. The latter make up the bulk of the *fibulae* found at Karlburg.[28] Local, handmade pottery can be found in the central area, but in the early times it played an unimportant role. This changes in the Ottonian period, when imported pottery like Pingsdorf ware and its imitations decline and local pottery begins to be more prevalent in the pithouses and pits.[29] Imported pottery from every period can be found in the Karlburg *villa* and also in the castle, with yellow, upper Rhineland wheel-thrown pottery from Southwestern Germany.

25 Ettel/Wamser 1994, 143.

26 Ettel 2001, 64, Abb. 16; Koch 1967, 81-87; Schulze 1981, 42-55; Gross 1991, 26-47, 65; Stamm 1962, groups 8.9.10-13.14,15; Lobbedey 1968, 69-71; 80.

27 Gabriel 1988, 133-135; Ring/Wieczorek 1979; Wamser 1999.

28 Haseloff 1990, 90-107 with maps 1-4; Clemens 1988; Frick 1992/93; Wamers 1994, the fibulae of Karlburg in the lists 2,4,5,7,8,11B,12,14,15,21-23,29,30,32b-c,34.

29 Gross 1991, 77-80, 90-92; Lobbedey 1968, 73-77; Lüdtke 1985, 92-94.

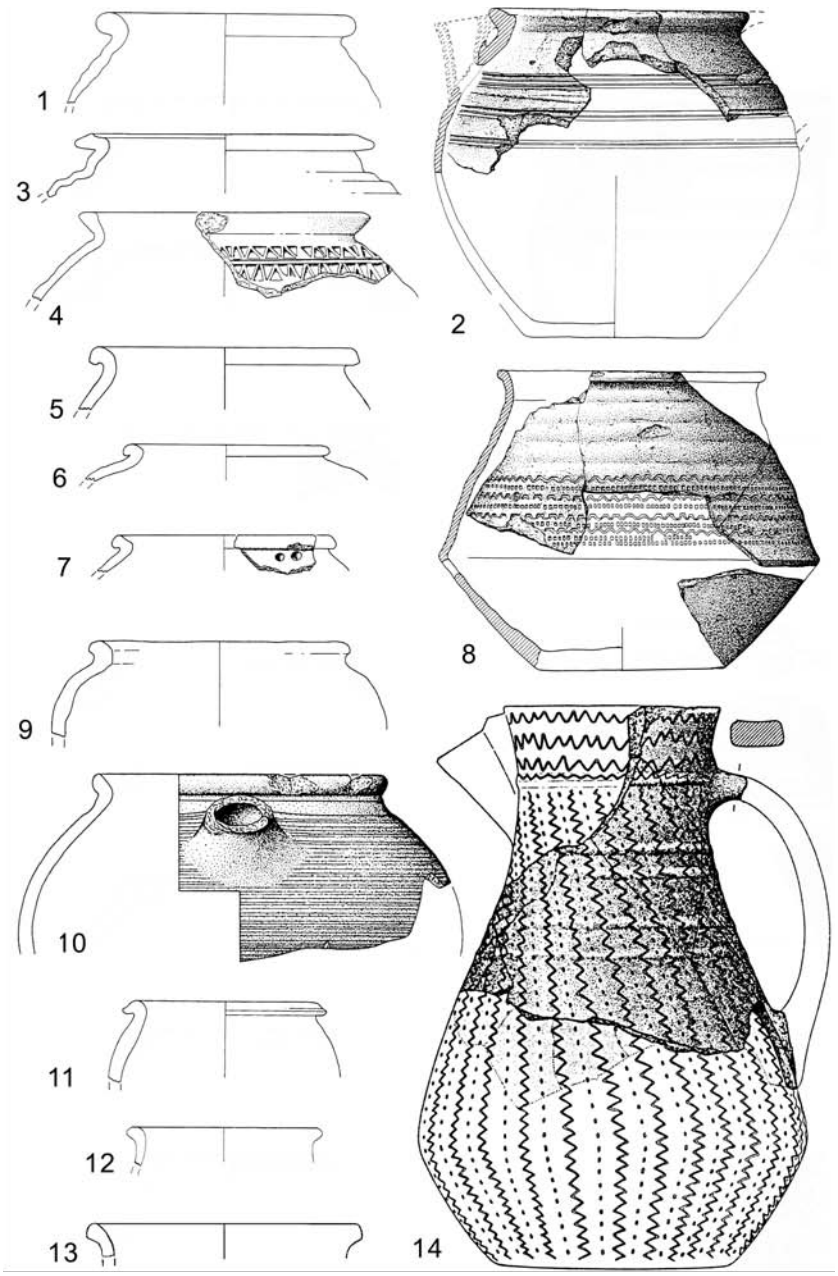

Fig. 6. Finds from *villa Karloburg*: 1-2. grey wheel-thrown pottery; 3-4. yellow, upper Rhineland wheel-thrown pottery; 5. red wheel-thrown pottery; 6-7. later Mayener pottery; 8. grey polished wheel-thrown pottery; 9-13. hand-crafted, secondary turned (nachgedrehte), wheel-tossed pottery; 9 and 11: ware 1a; 10. ware 1b; 12-13: ware 2a/b; 14. Tating ware. Scale 1:4.

Excavations in 1994 and 1996-1998 in the northern area of *villa Karloburg*

Since 1991 the surveys of the Archäologische Arbeitsgemeinschaft Karlstadt showed that the *villa* extended north of the present village of Karlburg. A rescue excavation in 1994 revealed several pitholes and one pithouse.[30] In the northern part of the *villa Karloburg* aerial photographs showed several pithouses, making an excavation necessary in 1996-1997, because the village of Karlburg wanted to build new houses in this area (Figs 1.3 and 4.2).[31] The topographical situation is the same as south of the village. The analysis of the animal bones was carried out by K. Kerth.[32] The settlement began in the seventh century and lasted until the middle of the thirteenth century, when Karlburg was destroyed in the feud known as the Rienecker Fehde of 1236, which was described in the written sources. At the latest after this date the settlement areas in the north and south of the present village Karlburg were abandoned and the centre of the settlement was finally transferred to the other, right side of the Main River, where Konrad von Querfurt founded Karlstadt in 1200. The ceramic finds are composed of wheel-thrown pottery of different provenance. But the hand-crafted and secondary turned (nachgedrehte), wheel-thrown pottery played a more important role than in the area excavated in 1991-1992 in the centre of the villa, which was most likely the location of the monastery. Also the absence of metal finds of high quality, especially from Carolingian times, indicates that this area may have been of different significance in comparison to the centre of the villa.[33]

On the other hand we have finds from the migration period in the northern and central area,[34] which are important to chart the development of the settlement of Karlburg as a local centre.[35] At this point in the research it is fair to ask whether the northern and central areas belong to the earliest age – that is, to the migration period. The northern part in particular seems to have developed in the early Middle Ages into an area characterised by regionalism. In contrast the southern part, which was excavated in 1991-1992, demonstrates Frankish influence from the beginning, and the site (including the castle) was most likely built in a time when the Franks were in power here. Excavations revealed nearly thirty pithouses in the eastern part, which were built in rows with rectangular fences and pits. The site density is very high.

Moving westward, there are fewer traces of settlement activities: There are no pithouses at all and the plan shows only pits and especially postholes, which indicate a settlement with stables, granaries and dwellings. This confirms the results of the

30 Ettel 2001, 352.
31 *Idem* 1998b.
32 Kerth/Ettel/Obst 2002.
33 Obst 1998.
34 Neubauer 1998.
35 Ettel/Hoppe/Watzlawik 1997; Mündel 2002.

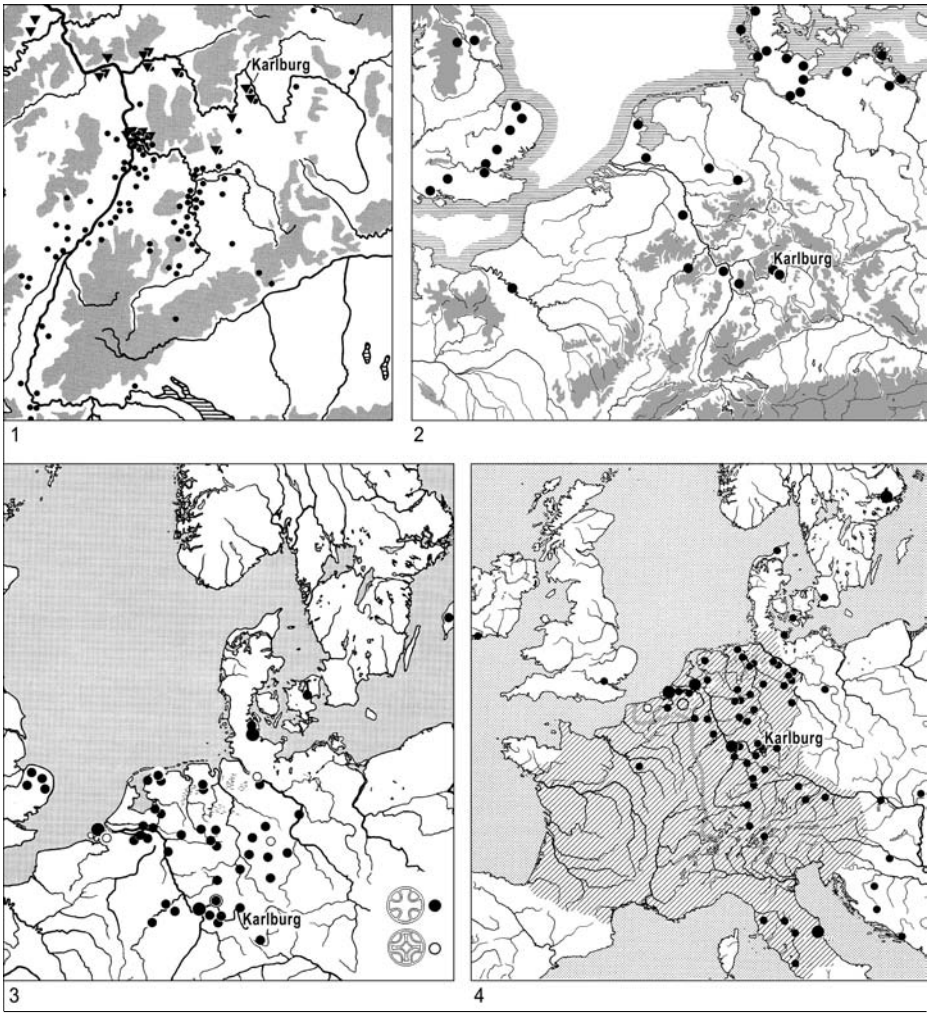

Fig. 7. Distribution of 1. yellow, upper Rhineland wheel-thrown pottery (points) and late Mayener ware (triangle); 2. Tating ware; 3. cross enameled *fibulae*; 4. objects with decoration in Tassilo style

excavation of 1991-1992 in the southern part of the settlement, in which one could also see a functional division of the settlement into an eastern part with pithouses and crafts and a western part with postholes and dwellings. This functional division was maintained throughout the history of the settlement and this confirms the systematic character of a large settlement of 20 ha, probably founded by Frankish colonists.

The western parts with the posthouses were used from the seventh century on, but they were given up before the eastern areas were abandoned. This can be seen

in the southern area excavated in 1991-1992 and probably also in the northern areas, excavated until 1998. This means a reduction of the settlement area, either in the eleventh or the twelfth century at the latest.[36] The reason for this development is an old branch of the Main, which runs parallel to the Main and was dried up in the early Middle Ages; it obviously supplied the settlement. The branch, filled with erosion material, was about 2 m deep and 40-50 m wide according to the excavations of 1991-1992 and the investigations of B. Sponholz.[37] Changes in the landscape, perhaps the lack of trees in the higher parts as a result of the dense population and high tides played an important role, too, so that the branch was flooded again. Historical sources show several extremely high tides of the Main since 1000, which probably caused the branch to be activated again. Therefore the settlement history has to be seen as varied – at first the settlers used a less favorable ground to build up their houses, and later they gave this site up, because the conditions became worse.

Excavations in 2002-2003 at the southern edge of *villa Karloburg*

The construction of a bridge at the southern edge of Karlburg made it necessary to carry out a rescue excavation in this area. The plan (Figs 3.3 and 4.3) shows the results of the excavation of 2002-2003.[38] In the eastern parts, near the Main River, the excavations produced about ten pithouses of varying construction, most of them built facing north. In the spaces between the pithouses one can see pits and postholes of wooden dwellings, probably farm buildings, stables or dwellings. Several pits and postholes cut through pithouses and confirm that the settlement has multiple phases. In the western part of the section there are only some loam pits, which mark the edge of the *villa Karloburg*. This find confirms the results of the surveys from the 1990s. At first sight the finds are quite similar to those of the excavations from 1991-1992 in the centre and southern part. The ceramics show a varied provenance, with a high percentage of imported wheel-thrown pottery. This high percentage indicates a strong Frankish influence in the southern part and southern edge of the *villa Karloburg,* especially in late Merovingian and early Carolingian times – for example, pithouse no. 17 with two ridge pits and a size from 3.7 m x 3.1 m and a depth of 0.5-0.7 m. In the filling of this pithouse lay several fragments of metal and bone – among them a decorated comb, bone awls, an iron buckle/clasp, iron knifes, an arrow head of iron and an iron key. Beads of glass and also some pitholes confirm the results of former survey finds, which suggested that this area was used in the late Latène period as well. On the other side some more recent pithouses from the late Carolingian and Ottonian times produced more hand-crafted

36 Ettel 2001, 88-89.
37 Sponholz 1998; *idem* 2001.
38 Ettel 2003.

and secondary turned (nachgedrehte), wheel-tossed pottery than imported pottery from the Rhine region. The composition of the ceramics seems to be comparable in quality and quantity to the area in the north – both areas with less Frankish influence than in the centre of the *villa* lay on the edge of the *villa*, perhaps typically.

The finds attest once again that the southern part of the settlement was in use from the seventh century. The thorough conservation and analysis of all pithouses and pits at the University of Jena will provide us with more details.

Conclusion

In the region of Karlburg, the centre of the settlement with its *castellum* and associated *villa Karloburg* with its cloister are situated on the left side of the Main River in Merovingian, Carolingian and Ottonian periods. The castle and the valley settlement belong together and can be seen as a single entity, as it is described in the historical sources. The extension of the *villa* alone shows the importance of the early medieval settlement and allows comparisons with early urban sites or developments, whether in the area of West Frankish monasteries or in the surroundings of royal courts or imperial palaces in the Carolingian and in particular the Ottonian age.[39]

The castle is situated at the Main, which was one of the most important travel and trading routes in the early Middle Ages and formed a powerful political background. Under its protection the settlement in the valley with its cloister could develop, first in royal hands, and then from 741-742, under the control of the bishop. On the other hand, the settlement in the valley was surely important for the supply of the castle with food, and craft products – i.e. textiles, metal products and so on.

Excavations made it possible for the first time to investigate elements of a settlement structure with a royal yard and cloister in Franken, the northern part of Bavaria.[40] With the methods available to archaeology the excavations proved that the Karlburg settlement in the valley was an important local centre with postholes of dwellings, stables, granaries and pithouses and pits used for craft activities, which are documented by the production of textiles, bone tools, by farming, fishing and above all, metallurgy of various kinds. The importance of the settlement can be seen in the investigations by archaeobotanists[41] and archaeozoologists[42].

Rye was found most frequently and played therefore an important role in the agriculture and in the nutrition of the inhabitants of the *villa* and probably of the castle on

39 Wamser 1992a, 319; Ettel 2004.

40 We know archaeologically investigated royal yards in Hallstadt (Losert 1981, 21-26.), imperial palaces in Forchheim (Sage 1989/1990), Rottweil (Klappauf 1982) and Helfta (Donat 1988)

41 Küster 2001, 259-262.

42 Vagedes 2001.

the hilltop as well. The analysis of the animal bones of the excavations in the castle and the settlement in the valley revealed that game was present in the settlement with only 0.9 % of the total animal bones found, but in the castle with 10.7 % of the total animal bones found. This shows as at other places[43] that a group of elevated social status or noble rank who lived at the castle had the privilege of hunting bison and red deer. We can see a difference between castle and the settlement in the valley in the composition of the domestic animals. In the castle "luxury" animals were consumed such as fowls, goose and above all chicken; this group also included pigs. The inhabitants of the castle ate animals up to three years of age, while in the settlement in the valley older animals were also consumed. From the analysis of age and sex of the pigs one can see, that pigs were bred in the settlement, which provided the castle with animals. The composition of the finds, the age and sex of the animals, give significant indications that a close social-economic relation existed between castle and settlement in the valley of Karlburg. The inhabitants of the castle were provided with meat and probably vegetable food, produced in the settlement in the valley. Altogether the investigations allow us an insight into the menu of the settlement in the valley and the castle of the early Middle Ages and the Middle Ages in general and provide us also with an idea of the livestock in a royal-episcopal estate as described in the *capitulare de villis*.[44]

Karlburg already existed in the seventh century. The late Merovingian and Carolingian times in particular are distinguished by finds mostly of Frankish character. The prominent situation of Karlburg is shown by comparing it with so-called "simple" sites such as for example Dettelbach/Ostheim, about 30 km east of Karlburg and also situated at the Main.[45] The excavation of this settlement produced 31 pithouses and postholes from several wooden houses in an area of 5000 m². The settlement began in the seventh century and was abandoned in the fifteenth century. The pottery is composed of a few sherds of Merovingian grey ware, but imported ceramics from the Carolingian and Ottonian times are completely absent and most finds belong to the local pottery, which was hand-crafted and secondary turned (nachgedreht), wheel-tossed.

One must also consider in Karlburg the presence of a group of elevated social status or noble rank and the structure of the valley settlement including craft areas, dwellings and the centre with its cloister and the harbour area for the landing of ships. The castle or castles as powerful military and political strongholds complete this unified area and indicate a planned foundation by Frankish colonists. Local centres of this kind with their military, economic, cultural and social backgrounds were surely very important at the time of the administrative, religious and political development and structural organization of the eastern Frankish parts of the kingdom. At other

43 Janssen 1990.
44 MGH LL Cap. 1, Nr. 32; Metz 1954; Dette 1996.
45 Vychitil 1991.

places, i.e. Würzburg, Forchheim, Bamberg, Hallstadt, one can see first signs of a comparable development.[46] In the area surrounding Karlburg, there appears to have existed the royal march – *fiscus regalis* – whose extent cannot be determined exactly, but with good reason can be thought as having been situated on the left and right side of the Main River in the old "Ortsgemarkung", as described in the written sources[47]. In this region the number of sites increases enormously from late Merovingian to early and late Carolingian periods.[48] Once more this development highlights the significance of this political, administrative, religious and economic local centre on the River Main, which played without doubt an important role in the development of the eastern Frankish parts of the kingdom, organized by the king and the Church.

In the eleventh and twelfth century, the centre in the development of the settlement moved more and more to the right side of the Main River, which showed relatively few traces of settlements in former times. When Conrad of Querfurt founded the town of Karlstadt in 1200, the removal of the settlement centre was sealed. In the development of the regional settlement area the castle, which belonged according to the written sources to the earliest castles in south Germany, was the cardinal point. The castle offered protection to the settlement of Karlburg in the valley with its central early medieval royal court and cloister, and later to Karlstadt on the opposite side of the Main.

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46 Würzburg: Wamser 1983; Forchheim: Sage 1994; Bamberg: Sage 1990; Hennig 1993; Hallstadt: Losert 1981.

47 Rödel 2001, 291.

48 Ettel 2001, 94-99.

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Some remarks on the topography of *Franconofurd*

Egon Wamers

Frankfurt's oldest map, the Siege Map produced by Konrad Faber in 1552, shows the state of the city before its enlargement and the building of its Baroque fortifications of the seventeenth century. The area of medieval Frankfurt is clearly defined by the path of the so-called Staufenmauer (wall of the Hohenstaufen), which was build around 1200 (Fig. 1). The area emerges as a large semi-circular complex on the Main River. The semi-circle, a common form for medieval river towns, was only interrupted by a more or less rectangular protrusion to the west, which could not be accurately explained by city historians like Fred Schwind.[1] By the end of the thirteenth century, the Carmelites were granted residency in this protrusion, and the order of the "Weißfrauen" was granted its own residence in an adjacent area to the north. Today the Archäologisches Museum and the Institut für Stadtgeschichte are situated in the middle of this Carmelite Cloister Square.

As post-war excavations of the Old Town have shown, Frankfurt's high medieval semi-circular form is only an enlargement of the town's early medieval topography. The late Carolingian and Ottonian imperial palace reached from around the "Römer" in the west to the "Fahrgasse" in the east, in the south to the contemporary banks of the Main and in the north to just below the "Schnurgass"(Fig. 2).[2] The diagram of the imperial palace in Fred Schwind's map, superimposed on the map of Ulrich of 1832, is based upon the results of excavations. The palace had a west-east alignment and consisted of both the *aula regia* and Salvatorkapelle (Chapel of the Savior). It was surrounded by a bow-shaped enclosure wall with two gates in the north and a massive, three-metre-thick embankment wall with a gate in the southeast (Fig. 3).[3]

It had been argued that the northern embankment was erected in the second half of the ninth century as a reaction to the Viking invasions in the 880s, whilest the massive

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1 Schalles-Fischer 1969, 248 ff.; Schwind 1984, 234; Orth 1986, 154.

2 On the topography of Frankfurt, cf. Battonn 1861-1875; Schalles-Fischer 1969; Fischer 1975; Lübbecke 1983; Schwind 1984; Orth 1986; Wamers, Grossbach 2000.

3 On the results of the excavation at the imperial palace, cf. Stamm 1955; Stamm 1962; Fischer 1975; Wahl 1982; Orth 1986, 144-167.; Hampel 1994; Steidel 2000, passim, especially 206-217; Wintergerst 2001; Wamers 2001; Wintergerst 2007.

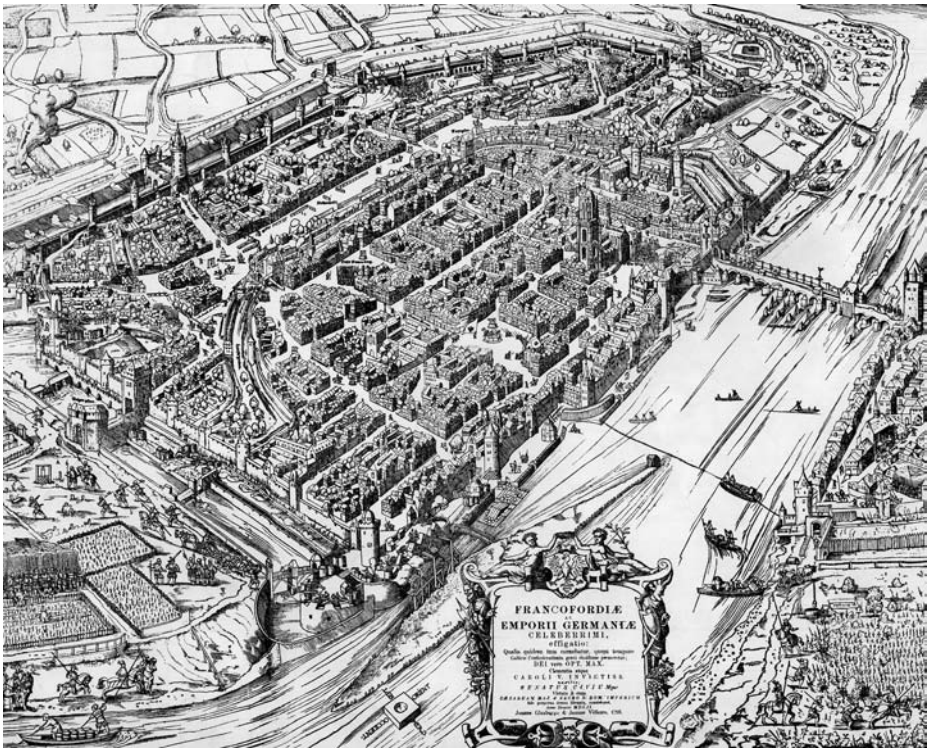


Fig. 1. Faber's map of the siege of the city of Frankfurt on Main of 1552

"three-metre wall" to the south towards the Main should be dated to the Salian era.[4] The recent investigations of Magnus Wintergerst, however, have shown that both were built in the Ottonian era and formed the first "town wall" of Frankfurt.[5]

The imperial palace on the so-called Domhügel (Cathedral Hill) was once surrounded on all sides by the Main and its tributaries, or rather drainage streams, during antiquity and the Middle Ages. The semi-circular wall followed this path and enclosed the flood-free area to the east, north and west. A bridge seems to have led from the small gate north of the Salvatorkapelle across the then swampy Braubach. In the West, where the north-south depression of the terrain is still clearly visible today, there are gates recognizable in the Ottonian wall in "Neue Kräme" in the northwest and in the three-metre-wall in the south towards the later "Mentzer Gasse" and the current "Alte-Mainzer-Gasse", the latter gate with a complex construction. There may have already been a fortification on the Main in the Merovingian era, perhaps in the form of a con-

4 Stamm 1966, 41.
5 Wintergerst 2007, 95-98.

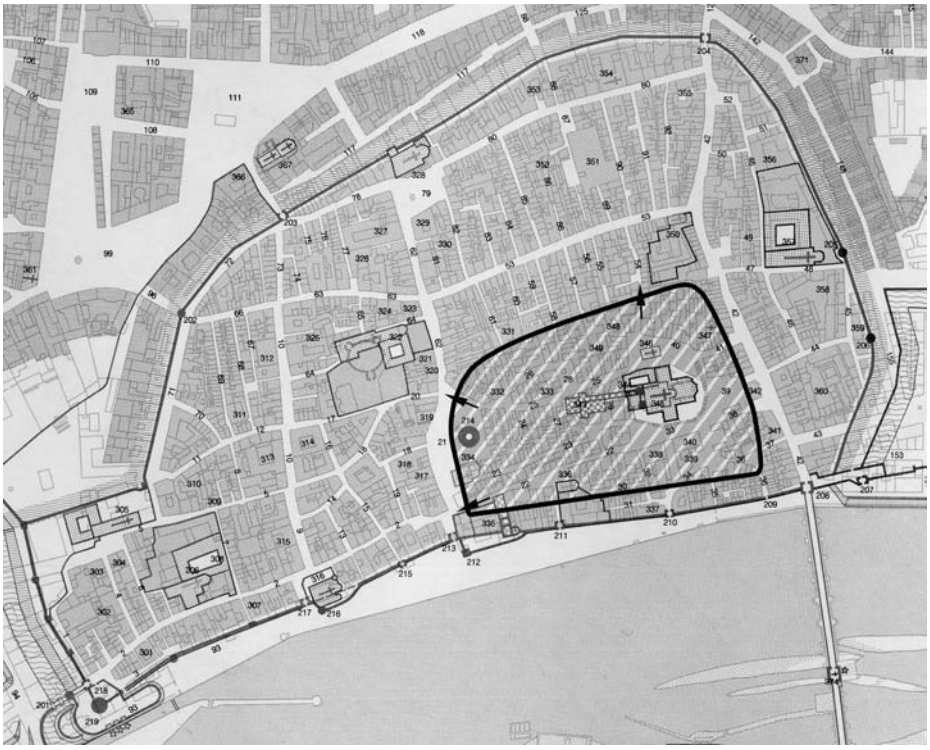


Fig 2. Fred Schwind's reconstuction of the Frankfurt imperial palace area on the basis of the Map of Ulrich of 1832. The gates are added

struction with a rampart and palisades, but there exist no archaeological data to confirm its existence.

Not much at all is known about the topography of the Cathedral Hill during Merovingian and Carolingian periods, which contained a courtyard on royal property. The west-east alignment of the palace grounds in the eighth century, which followed the morphology of the Cathedral Hill, probably goes back to the Merovingian era.[6] A preceding church seems to have been erected in the first half of the seventh century, one century before Boniface's reform of the Frankish church and his work in Hesse, Thuringia and Bavaria. Here, in the east of the hill, was the burial site of the noble stewards of the Frankish court and their families. From these, we have evidence of early medieval burial custom, including the opulent grave of a girl who had been buried here in a kind of memorial building from the end of the seventh century, as well as some more recent graves of the eighth and ninth centuries, which contain no grave goods (Fig. 4).

6 On the Merovingian findings see Wintergerst 2007, 18-43.

Fig. 3. Gate through the northern wall of the imperial palace in the Carolingian period. Found during street construction in 1906

We know almost nothing about the buildings of the royal court in Frankfurt in Merovingian and early Carolingian times. The court and adjacent buildings seem essentially to have been situated on the hill crest to the west of the modern cathedral. They consisted of new stone buildings but may have at least in part reused ruins of Roman buildings. Detlev Ellmers has explored the topography and function of a multitude of early medieval ports (on rivers, lakes or the sea), of which many had semi-circular ramparts.[7] While the most famous of them, Haithabu on the Schlei, was newly founded in the early ninth century, most of the others in Western Europe originated in late Roman towns (Fig. 5). It is typical, that during the Merovingian and Carolingian eras embankment settlements developed with landing-places for tradesmen, merchants and artisans formed on the waterfronts, often in front of old Roman town walls. A good example for this is Mainz, where the shore was divided into lots that were narrow, perpendicular to the Rhine, and cut approximately in half by a road parallel to the shore: a market road. The merchants' landing-places were on the shore,

7 Ellmers 1984, 174-212.

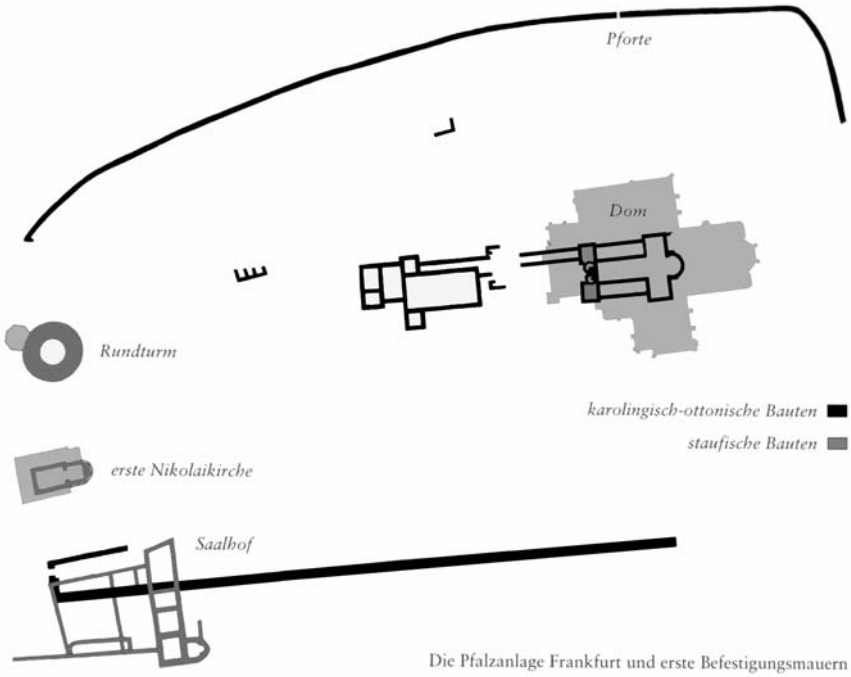
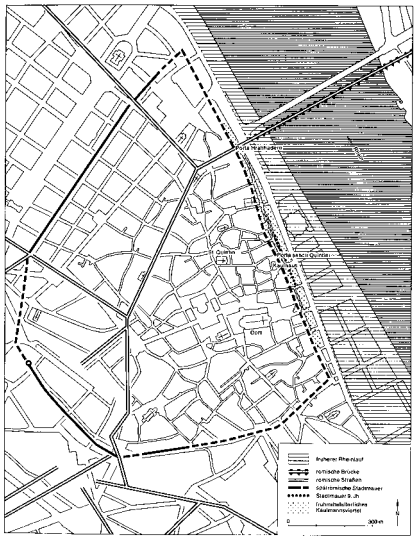


Fig. 4. Map of the early medieval findings on the Cathedral Hill (state of research after Wamers 2001, cf. note 3, for the Carolingian and Ottonian era now revised by Wintergerst 2007)

and they had houses with trading goods, stalls or workshops on the lots across from the market road. The merchant quarters of the Frisians and Jews were usually also located in these economically favourable embankments, as for example in Andernach. The Frisians in Mainz lived "in the best part of Mainz" (*in optima Mogontiae pars*) without providing a more precise location.[8] We also have substantial proof of such "one-street settlements" for Strassbourg, Regensburg, Köln or Dorestad. A reconstruction of the findings of the excavations of Ribe in Jutland vividly illustrates the nature of one such "one-street settlement".[9]

Was Frankfurt also such a "one-street settlement"? On this flood-free island at the important ford between Nida (Heddernheim) and Med [...] (Dieburg) there was originally a Roman settlement in form of a military base and street station, which still continued to function as an outpost of Mainz with Germanic mercenaries after the decline of the *limes* and the migration period.[10]

8 Cf. Wamers 1994, 196-197.
9 Jensen 1991, fig. p. 4.
10 Wamers 2001, 70-80.



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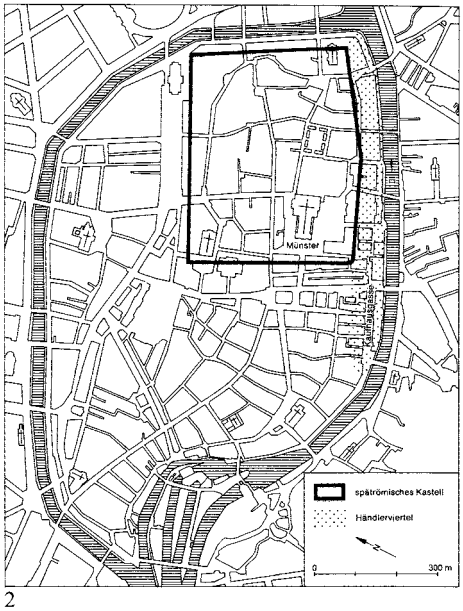

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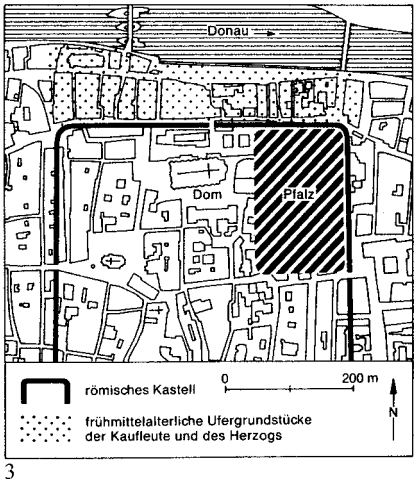

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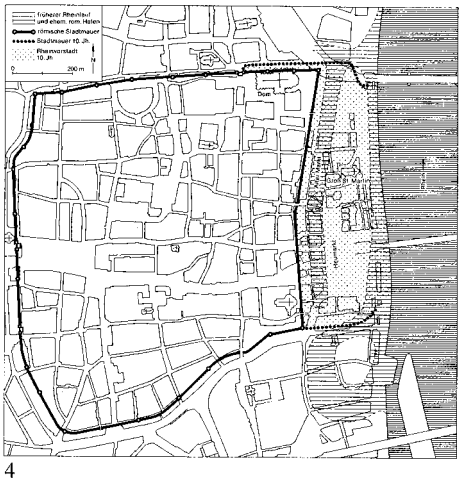

4

Fig. 5. Ground plan of early medieval “one-street settlements” at rivers. 1. Mainz; 2. Straßbourg; 3. Regensburg; 4 Cologne

After the Lower Main area was seized by the Franks around 500 *Franconofurd*, "the ford of the Franks", kept this function as a control point for the north-south land route and the east-west shipping route. The place and its surroundings became Fiskalgut (royal land), and the *actor dominicus* of the senior Frankish aristocracy administered the king's court erected here. At the end of the eighth century the court was equipped in such a way that it could provide for Charlemagne with his entire household and administration, military troops, clerical and secular grandees of the empire as well as numerous ambassadors and diplomats when, in 793-794, he hold an Imperial Diet and the famous synod.[11] Not only after the synod, but at other times too, the troops were rallied for military ventures in Frankfurt (or rather its surroundings), especially against the Saxons.[12] After the extension of the imperial palace in the first half of the ninth century, Frankfurt became the most important imperial palace of the East Frankish Empire as measured by the number of royal visits.

What did the *Franconofurd* of the ninth and tenth centuries look like? From excavations we know that the previous Main-embankment was further to the north than indicated on early modern maps. The whole bank area was filled up during the high and late Middle Ages, already as a substruction for the Salian "three-metre wall". Faber's map illustrates how one should envision the embankment area, in which the shore along the "Fischerfeld" (fishermen's camp) – east of the Hohenstaufen town wall – slightly rises to the lower terrace (Fig. 6).

This is what the bank of the Main also may have looked like right in front of the Cathedral Hill: with gangways and landing-places for boats, boathouses, storage-sheds and potentially stalls to sell their wares. Merian's map of the seventeenth century provides a typological representation of the same features, but this time with a quay filled up and consolidated as it is shown here, it was still crossable on horseback until the sixteenth and seventeenth centuries. In late fall 793, Charlemagne´s ship, coming from Würzburg, will have landed here, close to the ford. And on the eastern end, around the later port area and surrounding the Fischerfeld, the fishermen most likely will have had their landing-places, boathouses, sheds for the nets and other fishing utensils as well as the places for gutting and perhaps stalls to sell fish. In the tenth century the fishermen were in the king's service, and this was probably already true for the ninth, and maybe for the eighth century. Their residences may have been located to the north and southeast of the cathedral.[13]

It is unknown if there were also other artisans or merchants in this area. Yet it hardly seems to be a mere coincidence that from the twelfth century onwards the first Jewish Quarter in Frankfurt was situated south of the cathedral, probably close to the fishermen's quarter in the area of the current "Leinwandhaus" (Canvas House). This

11 Fried 1994.
12 Orth 1986, 135 ff.
13 Wamers 2000, 20-21 with notes 21-23.

Fig. 6. The Fischerfeld (fishermen's field) slightly ascending up to the lower terrace, north of the fortified bank in Frankfurt on Faber's map of 1552, fig. 1

situation is similar to other river towns, though proof does not exist for the permanent presence of Jews in Frankfurt already in the ninth century.[14] On the town maps of the early modern period and the nineteenth century, a road parallel to the old bank stands out, although the dense medieval building structure preserved little of the Carolingian and Ottonian topography: such a very old east-west passage ran through Frankfurt from the "Fahrgasse" in the east via the west gate to the modern "Alte Mainzer Gasse". It then passes the area later belonging to the Carmelites directly to the south and leaves the town in the direction of Mainz at the south-eastern main gate of the Hohenstaufen wall, the "Galgenport" (Fig. 7). Merchant activities along this "one-street settlement" are indicated by the street name "Die Wag" ("the scale"), south-east of the cathedral during the Middle Ages, where flour was officially weighed. The "Leinwandhaus" (Canvas House) was located to the west, on the area of the first Jewish Quarter, which existed until 1460. The "Leinwandhaus" employed the Frankfurt measurement ell as an official standard for trade control. Since the second half of the twelfth century at the latest, Frankfurt is royal mint.[15]

14 *Ibid*., 99-100 with older literature.
15 Orth 1986, 137 ff.

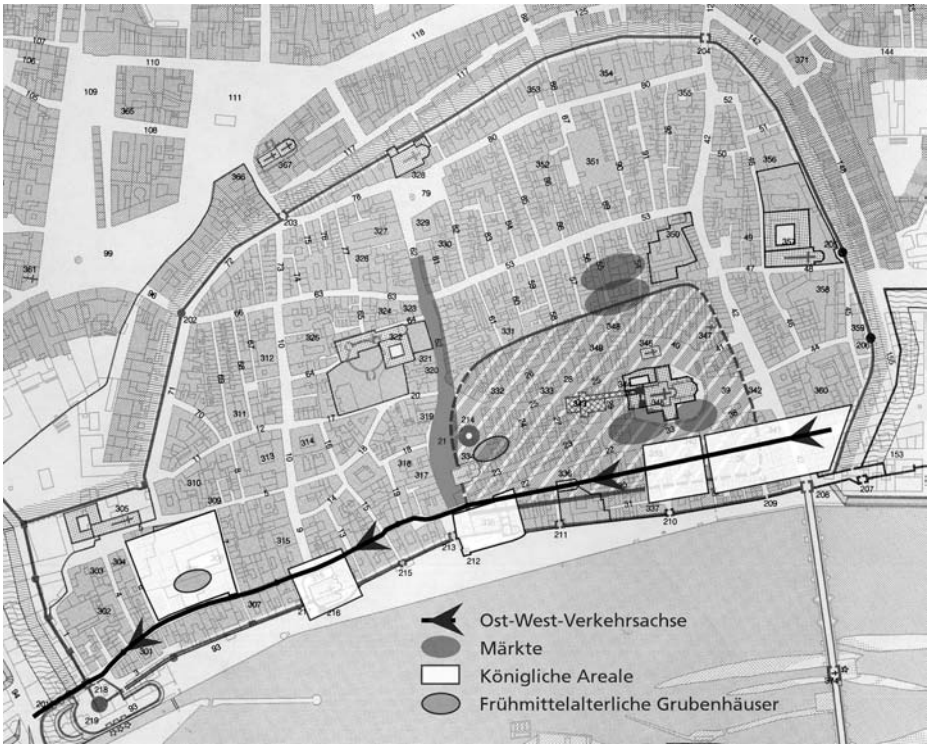

Fig. 7. Ground plan of high medieval Frankfurt with east-to-west road parallel to the Main River (1), early modern markets (2) and royal estates at the embankment (3) and early medieval pit houses (4)

Hints of market activities came down to us only through the younger street names: "Weckmarkt", in particular in the centre of the medieval town, the "Kräme" and "Neue Kräme" where the fair took place since the twelfth century (controlled from the Nikolai tower), as well as the "Markt" (market) and the "Hühnermarkt" (poultry market) to the northwest of the cathedral. "Rossmarkt" (horse market) and "Viehmarkt" (cattle market) were organized north of the Hohenstaufen town wall in the path of the modern "Zeil".

The area on both sides of the east-west road parallel to the river of the early medieval *Franconofurd* does not seem to correspond to the characteristics of a classical "one-street settlement". The likely reason for this is that it was exclusively royal land. The fishermen in the east were the "king's men". The Jews, as the empire's "Kammerknechte" (treasurers), will also have been settled on royal estates. Later standards for scaling and measuring indicate sovereign territory as well. The Hohenstaufen Saalhof (imperial palace) in the southeast of the early medieval palace as well as – further southeast – the extension of the Leonhardskirche, donated in 1219 by Emperor Frederick II (the St. Maria- und Georgskapelle) – all this hints that the whole embankment area had been royal ground in the early Middle Ages. The towing-path along the river-bank was *via re-*

gia in the middle of the eleventh century, and the River Main-toll at Frankfurt belonged to the empire.[16] Neither gives the name of the east-west axis any hint of trade activities, like for example the *via communis* in Mainz, the "Heumarkt" (hay market) and "Alte Markt" (old market) in Cologne or the "Kaufhausgasse" (department store lane) in Strasbourg. The hustle and bustle of trade on both sides of the street as in Mainz or Ribe will not have existed here.

In conclusion, let us return to the Carmelite-area west of the early medieval walled imperial palace. That it was included in the Hohenstaufen town around 1200 at the latest is connected with its geographical situation as well: a hill (the Carmelite Hill), protected from flooding, on which since the Ottonian era there had been settlement with pit houses[17] like further east on the edge of the "Domhügel". The area belonged to the old settlement core of *Franconofurd*; perhaps farm buildings adjacent to the imperial palace were situated here. Therefore we must consider if the semi-circle reconstruction of the early medieval Frankfurt should not be amended by adding a second settlement core on the Carmelite Hill. Marianne Schalles-Fischers' view that the Carmelite Hill was already a kind of *suburbium* in the pre-Salian era, questioned by Elsbeth Orth, should be given renewed attention.

(translation: Emiline Chienku Neugang/David Toalster)

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16 *Ibid*., 136.

17 Dohrn-Ihmig 1984, 14.

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Marburg Castle: the cradle of the province Hesse, from Carolingian to Ottonian times

Christa Meiborg

Introduction

The intention of the following paper is to focus on the current status of research concerning the development of the castle and city of Marburg from the ninth to the eleventh century.

The idyllic city of Marburg, with its many timber-framed houses, is located in Central Hesse at the upper reaches of the Lahn, surrounded by woodland. To the east, the valley is bordered by the Lahn Mountains, towards the west by the chain of the so-called Marburger Rücken (the "Marburg Ridge"). The Old Town was constructed on the slope beneath the castle hill, but not until the late Middle Ages did the bottom of the valley also became more and more populated (Fig. 1).

In the course of the restoration of the Old Town, from the seventies of the twentieth century onwards, a number of archaeological emergency excavations have taken place. In contrast, Marburg castle, today owned by the State of Hesse, was examined a lot more systematically. When extensive restoration, conducted by the Staatsbauamt Hessen – the Hesse state building authority – began in 1976, fortunately importance was attached to concomitant archaeological investigations. Until the completion of the restoration works in 2000, various excavations took place on the entire castle area. Therefore, the development of this site can be depicted rather well.[1]

Like many other cities which evolved in the Middle Ages, the settlement of Marburg developed in close dependency on the castle. From the municipal district only few archaeological features and finds from the ninth to the eleventh centuries are known so far. For the reasons mentioned above, I would first like to describe the development of the early castle complex and will subsequently illustrate the development of the town.

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1 For a comprehensive summary of these investigations, see Meiborg 1993, 10-15.

Fig. 1. Old Town of Marburg; from the northeast

Fig. 2. Castle; from the west

Marburg Castle

In the Middle Ages and in early modern times, Marburg Castle played an important role in the history of Hesse and in particular in the history of Marburg itself, being a residence of the Hessian landgrave. Even today, the castle as the town's landmark is fundamental for the empathy of the residents with their city (Fig. 2).

From 1977 to 1985, archaeological investigations were conducted alongside construction works in the so-called Leutehaus, in sections of the north wing and in most parts of the so-called Wilhelmsbau. In 1989/1990 a complete excavation of the area of the basement section beneath the west wing was carried out. Another excavation in a sector of the Waldeck Hall in the north wing took place in 1992 (Fig. 3). In the following years, further small archaeological investigations were accomplished on behalf of the Landesamt für Denkmalpflege Hessen – the state of Hesse national trust authority – until all restoration works were completed in the year 2000.

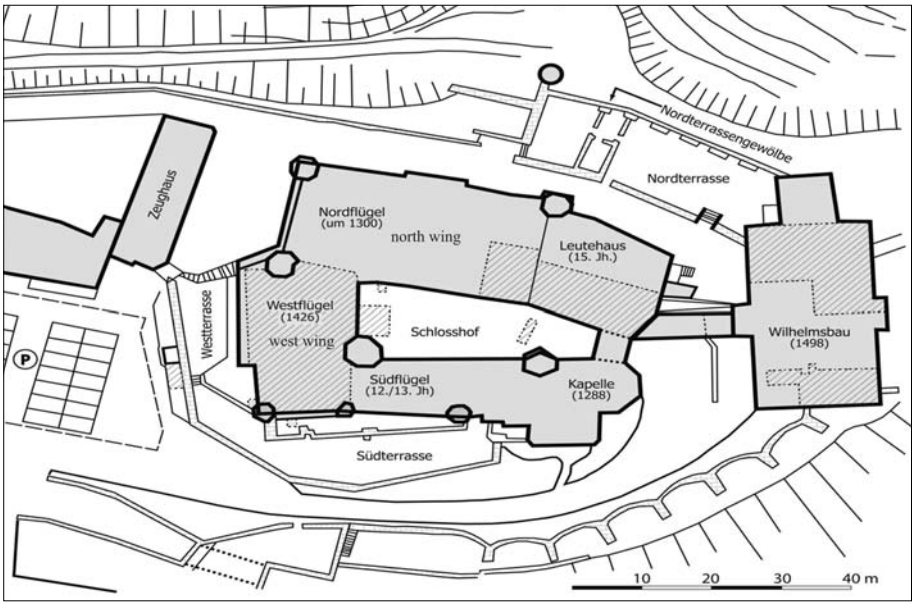

Fig. 3. Map with excavated areas

From the numerous archaeological features and finds I would like to focus on the results of the major excavation in the west wing. During this excavation, well preserved remains from the earliest, hitherto unknown construction phases of the castle could be uncovered.[2]

The west wing has always aroused the curiosity of the observer, as its lowest functional storey, the lower west hall, was constructed only between 6 and 8 m above the level of the surrounding area. Therefore, the building rests upon a massive wall without any openings to the outside (Fig. 4). In the course of the restoration works at the west wing, the archaeological investigation, starting from the floor of the lower west hall took place in August 1989. The works on site were carried out under my supervision. Within several weeks only, the archaeological team uncovered numerous walls and cultural layers under the floor, instead of the expected rock. Three core drillings distributed over the total area of the hall reassured that old walls lay beneath the floor of the hall down to a depth of 8 m.

What followed was a technical masterstroke, because a problem of statics had to be solved before excavations in the large hall could be advanced down to this depth. The architects and structural engineers of the state building authority designed a bridge-like steel construction in the upper west hall located above, diverting the weight of the

2 Latest related publication: Meiborg 2003.

Fig. 4. West wing; from the west

Fig. 5. Bridge-like steel construction in the upper west hall during excavation

building – otherwise resting upon the pillars – to the outer walls (Fig. 5). In the course of the excavation, the pillars, themselves weighing 50 t each, hung on thin steel bars above the heads of the archaeologists.[3]

In the following 15 months until October 1990, a large excavation team uncovered the inside of the west wing down to bedrock (Figs 3 and 6). From the numerous features documented at that time, the three oldest phases of utilization will be presented in the following section in the order of their uncovering.

Before long, the remains of a square keep with a side-length of 9.5 m appeared under the modern floor in the eastern section of the hall. Its west wall was well preserved, while the south wall ended after a few metres, cut off by the present-day east wall of the south wing. The two walls consist of small ashlar stonework. In the upper section of the southeast corner meticulous angular ashlar work emerged (Fig. 7). The actual floor space of the tower amounted to roughly 36 m²; the entrance was probably raised at the east wall, which was turned away from the main side of attack. Inside, the

3 Concerning technical problems of the excavation: Clausdorff 1991.

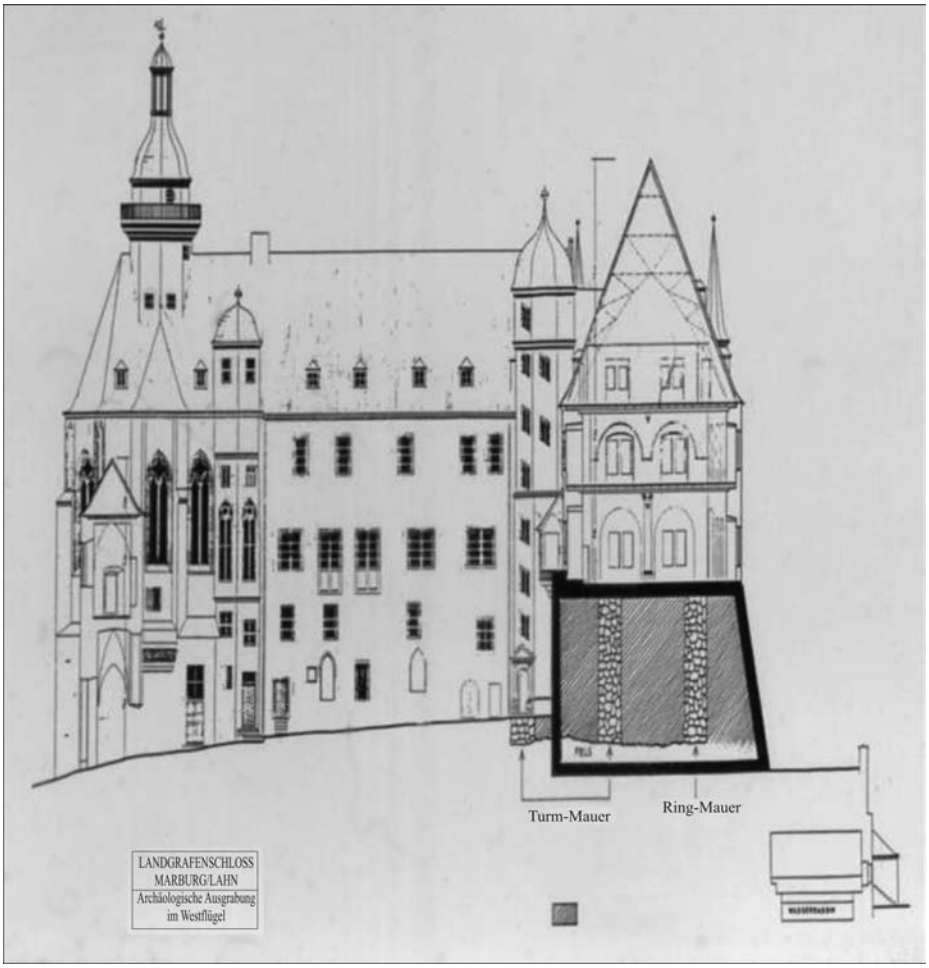

Fig. 6. Cross-section of the west wing; from the north

cultural layers from the time of utilization had been removed due to the construction of the present-day west wing in the fifteenth century.

On the west side, the tower was closely surrounded by a polygonal circular wall, preserved in the lower west hall over a length of approximately 30 m and up to a height of 4 to 8 m (Fig. 8). On the outside, it consists of small ashlar stonework of a somewhat larger size than that used for the tower, while the inside is composed of rather irregular roughly-hewn stones. Sand was systematically inserted between the tower and the circular wall, even at the time when the encircling wall was erected (Fig. 9). The filled-in material was soaked with lime water in order to consolidate it. The purpose of this backfill was to protect wall and tower from destruction in case of siege.

Fig. 7. Westside of the tower with angular ashlar masonry

Alongside numerous ceramic fragments of so-called Kugeltöpfe (ball pots) a number of shards of late-Carolingian pots were found in the backfill layer between the tower and the circular wall. Besides, numerous iron nails, a fragment of a horseshoe and various grindstones could be retrieved.[4]

The construction of this hitherto unknown early castle complex, a so-called Wohnturmburg (a residential castle tower) characteristic for the Salian period, is estimated to have taken place at the time around 1100.[5]

In the course of further excavations, the west wall of the tower proved to be built on the remains of an older and larger building made of plastered, sizeable ashlar stonework. Altogether, the west wall of both building phases is still preserved up to a height of 8 m, whereas the lower 4 m belong to the preceding building (Fig. 7). During the excavation and the subsequent uncovering of the northern wall of the large stone building, a late medieval heating chamber that had been fitted into the basement section at a later date was discovered. The southwest corner, however, could only be retrieved through its foundation trench, which was set into the rock and overbuilt by the circular wall to the south. The northeast corner of the building could be measured during investigations in the courtyard of the castle that borders the eastern part of the west wing.

Finally, the side-length of the large stone building could be reconstructed as ranging from 16 to 9.5 m. The rectangular building showed no inner division; windows and doorways were no longer recognizable because of the marginal state of the building's preservation (Fig. 10). In the southwest corner of the building the original floor surface had been preserved on an area of roughly 8 m². Underneath stretched a light-coloured layer, riddled with stones and plaster, considered to be the construction layer of the building.

4 A manuscript on the pottery from the oldest cultural layers of the west wing is currently in preparation by the author. First published in Meiborg 1999/2000, chap. Gefäß- und Ofenkeramik.

5 Böhme 1999, 61-65.

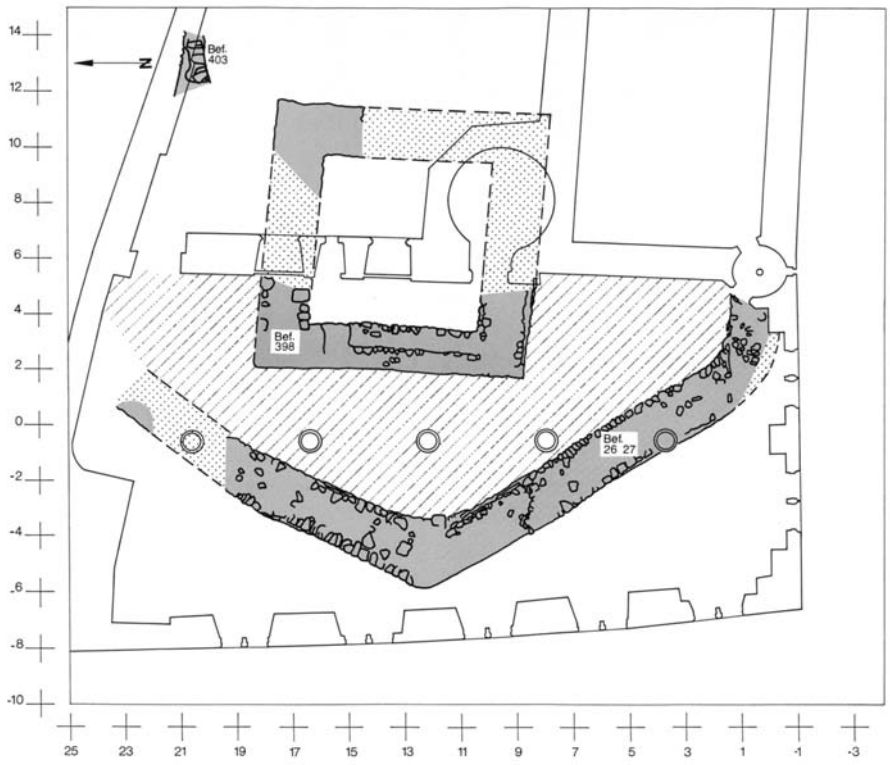

Fig. 8. Map of the tower with circular wall

Besides various other finds, a dipterous arrowhead as well as an ivory chessman, a pawn (Fig. 11), was found in the utilization layer.[6] The ceramic finds indicate that the building was constructed around the year 1000, or rather in the early eleventh century. The large stone building with approximately 70 m² of floor space is typologically to be addressed as a so-called Festes Haus. These kinds of large, representative stone houses with up to three stories and an entrance that is in most cases located on the ground floor have appeared more frequently since the middle of the tenth century.[7] Other buildings of this time could not be excavated on the castle plateau so far. Only small remains of the wall westwards of the building, which is partly overbuilt by the polygonal circular wall, could be estimated as originating from this phase of construction.

6 Kluge-Pinsker 1991, 48-49.
7 Barz/Zeune 1999, 257-260.

Fig. 9. Inside of the circular wall; from the west

Underneath the construction layer of the stone house, a completely unexpected cultural layer measuring between 20 and 40 cm in thickness appeared above the bedrock. It also stretched along the side wall of the building as far as to beneath the foundation of the circular wall and was documented as having an entire surface of 48 m². Apparently, the oblong building was let into this already existent, older cultural layer during its construction.

Primarily, ceramic shards of late-Carolingian tradition and a small amount of very early Kugeltöpfe, probably from the second half of the tenth century, were found in the multi-layered horizon. Alongside numerous construction nails, grindstones and a stone artefact from the middle Stone Age, a turquoise-green, melon-shaped, corrugated glass bead could be retrieved, a bead-form that is frequently encountered in Northern Europe on ninth and tenth century-excavation sites (Fig. 12).[8]

This cultural layer proved that the earliest settlement on the castle plateau evolved in the course of the ninth and tenth centuries. Underneath the west wing, however, constructional remains from the earliest time of the castle are not preserved, only minor remains of the wall embedded in clay underneath the Leutehaus might date back to this time. Apparently, the first, possibly wooden construction phase was entirely removed with the construction of the oblong building.

The mighty castle ruin at the base of the west wing was braced and stabilized after the excavation. Today, the discoveries and findings of the excavations are presented in the restored west hall and in addition, glass openings permit a view of buildings from the period of the year 1000 to the fifteenth century (Fig. 13).

Thus, what do we know about the development of a settlement at the foot of the castle?

8 Steppuhn 1998, 33.

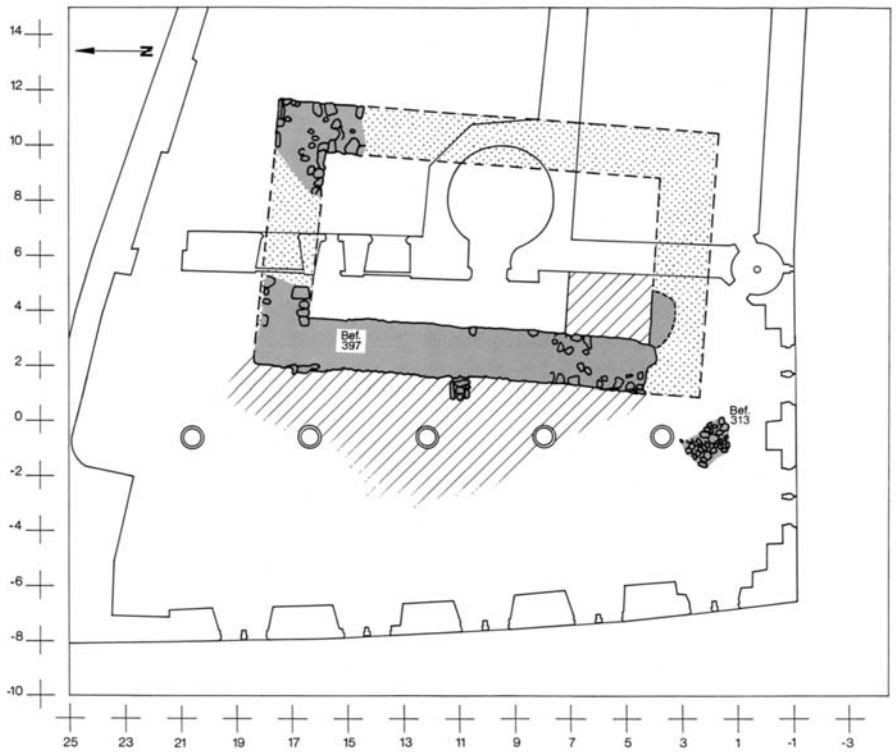

Fig. 10. Layout of oblong building

Town of Marburg

Historical sources relating to the castle and the settlement begin with the mention of a knight "de Marburg", a liegeman of the Thuringian landgrave in 1138/39. From the ninth and tenth centuries we have only some single scattered finds of ceramic shards from the present-day Old Town-area. Further singular finds are scattered over the present-day northern area of the town (Fig. 14).[9] The position of the settlement connected to the castle which served for its provisioning, could to this date not be located exactly.

Also, only few eleventh-century archaeological finds are known. In 1994, excavations in the area of the former millstream were carried out on the occasion of the building of a new hotel at the foot of the Old Town. In the course of these excavations, rich sediment layers were uncovered, in which organic materials were excellently pre-

9 Locations of the findings based on files of the Archäologische Denkmalpflege Marburg (the Marburg archaeological conservation authority).

Fig. 11. Ivory chessman (pawn; Ø 1.8 cm, h 2.3 cm)

Fig. 12. Turquoise melon shaped glass bead (Ø 2.0 cm, h 1.8 cm)

served. As a result, several posts were able to be excavated that apparently belonged to a former reinforcement of the bank, by means of dendrochronology these could be dated to the early eleventh century. Remains of fish traps indicate a continuous utilization of this area for fishing. Furthermore, large numbers of almost complete pots, mainly stemming from the thirteenth century, could be retrieved from the alluvial sand. Numerous well preserved leather remains indicate a nearby shoemaker's workshop (Fig. 15), while fragments of cattle-skulls with horn pegs point towards a tanner – both of these professions were practised outside the city gates due to their smell.[10]

Regarding the twelfth century, our knowledge concerning the development of the town of Marburg increases significantly. With the new owner of the castle, the Thuringian landgrave from the House of the Ludowingians, the castle gained new importance, as the estates of the landgraves were administrated here. Around 1140 Marburg obtained its own coinage.[11] The first urban settlement in the area of Killian's Chapel and north of it, located in the present-day Old Town, can be made out for the early twelfth century. Initially, it was probably only enclosed by a wooden stockade and trench, while the steep east side was protected by its natural scarp[12] (Fig. 14). Stratified ground findings from the town area of the twelfth century are rather scarce, too. At that time, the town extended towards the west. A first town wall made of stone can be dated to around 1180, a further extension probably took place in the thirteenth century.[13]

10 Marburger Mittelalter 1995.
11 Leister 1966, 7.
12 Strickhausen 1997, 14-16.
13 *Ibid.*, 18-29.

Fig. 13. Present-day west hall

Conclusion

In the ninth or at the beginning of the tenth century a first castle complex existed on the Marburg Castle hill, possibly constructed of wood. Due to topographical considerations, its spatial centre must have been in the present-day west wing. In the second phase around the year 1000, a stone building, a Festes Haus, was erected on the top of the plateau. No adjoining buildings, nor the encircling wall of this construction phase could yet be excavated, moreover these even might have been destroyed by later overbuilding.

Around the year 1100, this complex was probably considered to be outdated, so that it was converted into a residential castle tower, a Wohnturmburg, typical for the Salian period. The square keep, protected by a circular stone wall, stood in the centre of the building complex. Further buildings from this third phase have not yet been identified. The entire inside of the castle grounds was back-filled with sand and it is only owing to this back-filling that essential parts of the earliest castle periods have survived until today. The owners of the castle were first mentioned together with the Thuringian landgraves, around 1138/39.[14]

14 Concerning the early possessory rights of the Mar-Burg, the "Mar-Castle", see Reuling 1991, 169-176.

Fig. 14. City map according to Görich with discovery sites. Oldest area of town marked by grey line

Fig. 15. Leather shoe, "Biegeneck" excavation site; Old Town of Marburg

The first settlement of Marburg dating from between the ninth and the eleventh century and having probably developed in the vicinity of the castle, could not be located so far, as definite ground findings from the town area are as yet still missing. Possibly, it extended in the area of the present-day Old Town east of what is today known as the market place around Killian's Chapel, as the first municipal settlement can be reconstructed originating there in the early twelfth century.

The archaeological investigations of the last 35 years have yielded numerous new findings concerning the history and the development of the castle and the city of Marburg. During this time, it also became evident that only those excavations can render adequate results, that can be conducted with sufficient financial resources combined with plenty of time, as has been the case for the excavations at the castle.

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Das karolingerzeitliche Kloster Fulda – ein „*monasterium in solitudine*". Seine Strukturen und Handwerksproduktion nach den seit 1898 gewonnenen archäologischen Daten*

Thomas Kind

1. Der Kenntnisstand zum Kloster Fulda

Fulda ist das bedeutendste und eines der am häufigsten in der Geschichtsforschung behandelte frühmittelalterliche Kloster des Frankenreichs. Sein Skriptorium spielte eine bedeutende Rolle bei der Überlieferung wichtiger Texte wie z.B. (indirekt) der *Germania* des Tacitus und des Hildebrandlieds. Dieser Aufsatz widmet sich der Neubewertung des archäologischen Komplexes aus der Langebrückenstraße in Fulda, der erste und bis heute umfangreichste Fundkomplex Fuldas, den der ortsansässige Lehrer Joseph Vonderau ergraben hat. Die auf diesen Funden und ihrer Auswertung beruhende Interpretation war maßgeblich für alle folgenden Grabungen Joseph Vonderaus und seines Neffen und Nachfolgers Heinrich Hahn und fand außerdem Eingang in alle bis heute erschienenen Übersichtsdarstellungen zur Geschichte des Klosters Fulda. Während jedoch für andere historische Disziplinen moderne Bearbeitungen vorliegen,[1] gibt es bisher keine aktuelle Wertung der archäologischen Quellen zur Frühgeschichte.[2]

Einige aus den Schriftquellen bekannte Ereignisse müssen hier jedoch kurz benannt werden, weil sie grundlegend für die Vorstellungen Vonderaus waren und wesentlich für die Interpretation der archäologischen Funde sind.

Die Gründung des Klosters Fulda erfolgte am 12. März 744 durch acht Mönche unter Leitung des Sturmi im Auftrag des Bonifatius. Der Bezug zu den übrigen kir-

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* Der Aufsatz ist dem Fuldaer Archäologen Matthias Müller gewidmet, der die Neubearbeitung der Funde aus der Langebrückenstraße angeregt hat und vor Vollendung der Arbeit überraschend verstorben ist.

1 Für die Geschichte bis um 1000: Hussong 1985 (mit umfangreicher Bibliographie bis um 1980); ders. 1986; Becht-Jördens 1992 sowie die Aufsätze in Heinemeyer/Jäger 1995 und Schrimpf 1996. Zur Baugeschichte siehe: Krause 2002; Ellger 1989.

2 Es folgten auf die Untersuchungen Hahns nur einige moderne, mehrheitlich nur summarisch erwähnte Untersuchungen: Ludowici 1991; dies. 1994; Müller 1999; Müller/Rittweger 2001.

chenpolitischen Entscheidungen Bonifatius‘ ist durch die zentrale Lage inmitten seines Wirkungsraums ebenso offensichtlich wie das strategische Interesse des karolingischen Königtums gegen das Herzogtum Baiern und die noch unbekehrten Sachsen.[3]

Der Gründung ging eine umfangreiche und detailiert überlieferte Suche nach einem geeigneten Ort voraus, bis schließlich der Platz *Eihloha* in der Einöde der *Buchonia* mit gutem Boden, Wasserläufen und Quellen ausgewählt wurde.[4] In einem kleinen Becken zwischen Vogelsberg und Rhön gelegen, bot er einerseits einen gewissen Schutz und war andererseits verkehrsgünstig an mehreren Fernstraßen sowie an der nach Norden ins sächsische Gebiet fließenden Fulda positioniert.[5] Alle Quellen betonen die einsame Lage und Menschenleere des Platzes (*in heremo vastissimae solitudine, horrendum desertum*), was jedoch meist als hagiographischer Topos interpretiert wurde. Dagegen sprechen nämlich der bereits vorhandene Name des Platzes, die während der Suche angetroffenen Fernstraßen von der Wetterau ins Grabfeld und von Mainz nach Thüringen und die *mali homines*, die beim ersten Gründungsversuch die Mönche für etwa ein Jahr vertreiben konnten.

Als Beweis für diese Sicht galt jedoch stets nur der archäologische Befund. Nach dem Ausweis der Ortsnamen gehört der gesamte Fuldaer Raum nicht zum Altsiedelgebiet; Namen auf -heim erscheinen im Umfeld nur am Rhein, Main, Werra, Diemel und, am nähesten gelegen, im Grabfeld. In den Schriftquellen ließen sich bis um 900 im Umkreis um das Kloster kaum private Bodeneigentümer nachweisen und die Gründung wurde nur durch eine königliche Abtretung einer *marcha* von 4000 Schritt Radius, verbunden mit einer Aufforderung zur Resignation von allen denkbaren Rechten an die Edlen des Grabfelds (die *mali homines*?), abgesichert.[6]

Bereits die erste Klosterkirche wurde in Stein errichtet, ihr Aussehen ist jedoch weitgehend unbekannt.[7] Wichtige Anregungen für die weitere Entwicklung bekam

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3 Vita Sturmi cap. 12; von Padberg 2003, 68-69, Karte im Einband; Richter 1900, 18; Hussong 1985, 25-27, 34-35; Lübeck 1949, 108; Krause 2002, 11. Das eigentliche Gründungsdokument ist nicht erhalten. Da Parallelüberlieferungen zur Gründung des Klosters weitgehend fehlen, ist jede Darstellung zur Frühzeit des Klosters Fulda zwangsläufig im Kern eine Interpretation der Vita Sturmi.

4 Vita Sturmi cap. 4-14; verfasst vom späteren Abt Eigil, der Sturmi rund 20 Jahre persönlich gekannt hat, siehe Vita Sturmi cap. 1.

5 LAGIS Karten 1 und 4.

6 Vita Sturmi cap. 7, cap 10-11; Besiedlungskarten 7a, 8a und 8b in LAGIS; Hussong 1985, 25-27, 34-35; Lübeck 1949, 107; Elmshäuser 1992, 11, 22 Anm. 98-100; Richter 1900, 8-18.

7 Gesichert wird die Steinbauweise durch die Erwähnung eines *rase*, wahrscheinlich als Kalkbrennofen zu übersetzen (Richter 1900, 18-24). Jacobsen 1992, 193-199 Abb. 84-86 rekonstruiert eine 40 m lange dreischiffige Basilika mit Apsis im Osten, aber ohne Querschiff. Krause 2002, 39, 161-163, 168 Anm. 2, 171, 173 schlägt hingegen ein etwa 11 m breites Hauptschiff vor (26,60 m über alles) und schließt daher eine identische Breite des Hauptschiffs wie in der jüngeren Ratgar-Basilika von 16,70 m aus.

Sturmi auf einer Studienreise nach Italien, wo er wahrscheinlich bei der Weihe der neugebauten Basilika in Montecassino 748 zu Gast war.[8] Auch in Fulda müssen die Bauarbeiten zügig vorangegangen sein, da schon 751 der Hauptaltar geweiht werden konnte. Im selben Jahr erfolgte die päpstliche Exemtion Fuldas aus der kirchenrechtlichen Aufsicht des Bischofs, eine Sonderstellung, die auch durch Bonifatius' Wahl als seine Grablege betont wurde. Diese Entscheidung sicherte dann den enormen Anstieg von Schenkungen und damit die weitere Entwicklung des Klosters, da schon vier Jahre nach der 754 erfolgten Beisetzung des Bonifatius der erste Pilger zu seinem Grab bezeugt ist.[9]

Für die innere Entwicklung des Klosters war jedoch die Verbannung des nun als Abt bezeugten Sturmi nach Jumièges in den Jahren 763-765 wichtiger, da er dort offenbar wichtige Einblicke in die Struktur eines Großklosters erhielt. Nach seiner Rückkehr reorganisierte er die Verwaltung des Fuldaer Klosters, führte die *ministeria monastica* ein, ließ die Kirche ausschmücken und die übrigen Gebäude (mehrgeschossig?) ausbauen sowie einen beträchtlichen Kanal graben, der einen Teil des Fuldawassers zum hochgelobten, leider in den Quellen nicht näher erläuterten Nutzen in das Kloster leitete.[10] Als er kurz nach seiner Rückkehr aus dem Sachsenkrieg starb, hatte Fulda bereits eine beachtliche Größe erreicht und beherberte 300 bis 400 Mönche.[11]

Im Abbiat seines Nachfolgers Baugulf (779-802) begann der spätere Abt Ratgar noch als Mönch mit dem Bau eines *templum orientale* (einer Ostkirche?), zunächst vermutlich nur als Erweiterung der bestehenden Kirche konzipiert. Nach seiner Wahl zum Abt im Jahr 802 erweiterte er den Plan um eine Westkirche (das Westquerhaus?) und verband schließlich beide Teile zu einer großen, dreischiffigen, mit 98 m außerordentlichen langen Doppelchor-Basilika mit westlichem Querschiff und Hauptaltar, orientiert

8 Richter 1900, 23-29, 25 Anm. 3, 52-54; Hussong 1985, 40-85; von Padberg 2003, 69. Zu beachten ist hierbei die besonders enge Verbindung von Bonifatius und einigen anderen angelsächsischen Kirchenführern mit Rom und Montecassino.

9 Richter 1900, 29-31, 29 Anm. 2; LAGIS Karte 9.

10 Vita Sturmi, cap. 21: *...cogitans, qualiter adimpleri potuisset quod Sancta Regula praefatur, ut artes diversae infra coenobium continerentur...congregatis quantis potuit fossatoribus et, ut ipse erat acer ingenio, explorato passim cursu fluminis Fulda, non parvo spatio a monasterio ipsius amnis fluenta a proprio abduxit cursu et per non modica fossata monasterium influere fecit, ita ut fluminis impetus laetificaret coenobium Dei. Quantum illud opus fratribus profuit quantamque utilitatem adhuc quotidie ministeret, et cernentibus et utentibus manifestum est*; Gesta abbatum 213: *Inter alia multa utilia partem fluminis Fuldae monasterio per aquaeductum introduxit tantae utilitatis, ut vix verbis explicari queat*. Richter 1900, 42-55; Elmshäuser 1992, 11-12, 22-23 Anm. 98-106. Das Exil war das Ergebnis eines Streits mit dem Erzbischof Lul von Mainz, der versuchte, die Oberhoheit des Bonifatius über das Kloster Fulda fortzusetzen. Dieser Versuch konnte jedoch abgewehrt werden, Fulda erlangte Königsschutz. Vita Sturmi cap. 17-20; Hussong 1985, 85-111; von Padberg 2003, 108-111.

11 Vita Sturmi cap. 22; Richter 1900, 62-70; Hussong 1986, 129-141, 164; LAGIS Karte 7b.

am nun verlegten Bonifatiusgrab. Da einige Altäre beibehalten wurden, ersetzte diese Kirche offenbar ihren Vorgängerbau am gleichen Platz.[12]

Die gigantischen Baumaßnahmen überforderten jedoch die wirtschaftlichen Möglichkeiten und führten zu massiven Störungen des regulären Klosterbetriebs, jedenfalls beschwerten sich Teile des Konvents mit dem Supplex Libellus 812 beim König und hatten mit der Wiedervorlage 817 Erfolg. Der neue Abt Eigil (818-822) entstammte einer traditionalistischen Fraktion des Konvents, reorganisierte die Ökonomie und Verwaltung, vollendete aber dennoch die Bauten Ratgars und ließ sie 819 durch den Mainzer Erzbischof weihen. Außerdem ließ er den Kreuzgang *more romano* von der Süd- auf die Westseite der Kirche verlegen, sowie eine als Abtsgrablege und Friedhofskirche konzipierte Rotunde erbauen und St. Michael weihen. Andere Nebenbauten wie ein Abtspalast und ein *pistrinum* (Mühle?, Bäckerei?) müssen damals längst vorhanden gewesen sein.

Im folgenden Abbiat des Hrabanus Maurus (822-842) erlebte das Kloster mit über 600 Mönchen seine Blüte, es werden jedoch nur noch kleinere Bauarbeiten in der Kirche sowie an einer Reihe von Nebengebäuden erwähnt.[13] Im Abbiat des Sigihard (870-891) wurde 882 eine steinerne Brücke über die Fulda errichtet, .[14] Die Krisen der spätkarolingischen Zeit hinterließen deutliche Spuren, Fulda bewahrte aber seinen Status und spielte eine bedeutende Rolle in der Zeit Konrads I., der in Fulda bestattet wurde. Im Abbiat des Helmfried (915-916) wurde wegen der akuten Gefahr durch die dann tatsächlich *usque ad Fuldam* vorstoßenden Ungarn die Klosterbefestigung erneuert.[15]

Auch in ottonischer Zeit bewahrte Fulda seine große Bedeutung, daran konnten auch die schweren Zerstörungen durch ein Feuer 937 (Neuweihe der Kirche 948) zunächst nichts ändern. Das *Sacramentarium Fuldense* beschreibt eine Prozession durch das Kloster und liefert damit erstmals eine Liste der vorhandenen Bauten. Die altehrwürdige Basilika überstand Brände in den Jahren 1120, 1286 und 1398, wurde aber kurz nach 1700 schließlich für einen barocken Neubau abgerissen.[16]

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12 Die genauen Maße der Kirche und ihre Gliederung sind bis heute umstritten, vgl. Krause 2002, 12-15, 39, 154, 159-162, 171, 173; Hussong 1986, 148-153.

13 Vita Aegilis metr. cap. 19, 25; Richter 1900, 44-48, 59-60; Ellger 1989, 104-116; Hussong 1986, 150-159, 166-168, 181-195, 277-278; Krause 2002, 13, 16, 153-154, 157-159, 171-172, 174; Schwind 1984, 111, 123 mit Anm. 39; Jacobsen 1992, 194 mit Anm. 31; Lobbedey 1986, 404.

14 Gesta abbatum 213; Vonderau 1931, 57; Hussong in Heinemeyer/Jäger 1995, 113 Anm. 213.

15 Hussong 1986, 202-236, 241-243, 279 Anm. 659. Die erste Errichtung dieser Befestigung ist unbekannt.

16 Ellger 1989, 95, 100-101; Krause 2002, 17-25, 30, 37, 40, 165; Hussong 1986, 254-255.

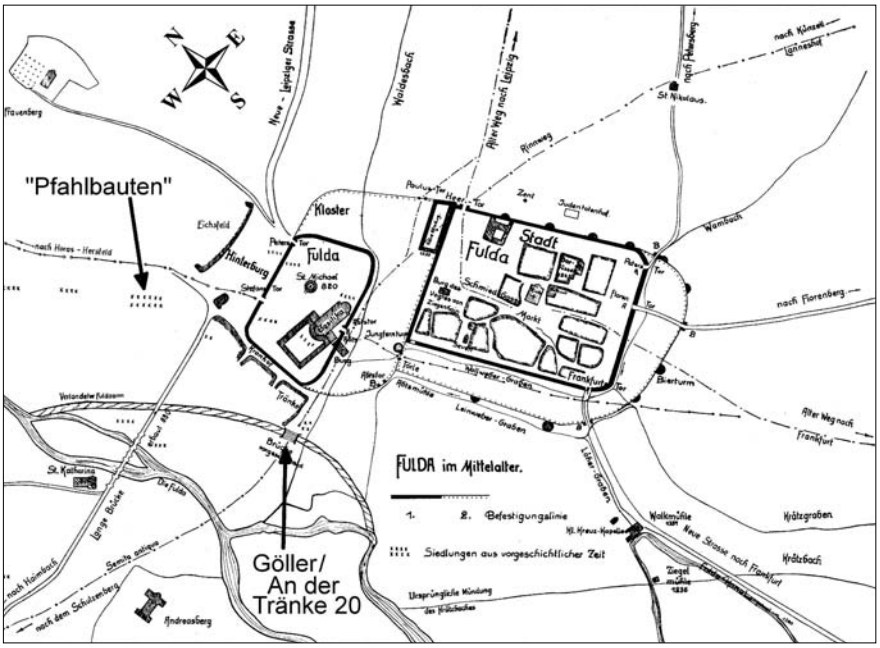

Abb. 1. Die Lage des mittelalterlichen Fulda

2. Die Ausgrabung von 1898-99 und ihre Interpretation durch Vonderau und Hahn

Die erste Ausgrabung Joseph Vonderaus war auch seine ergiebigste und folgenreichste. Sie fand in der Langebrückenstraße am Hang unterhalb des ehemaligen Klosters im Garten des Fabrikbesitzers Schmitt statt (Abb. 1 „Pfahlbauten“). Dort waren beim Bau eines Brunnens 1897 archäologische Funde beobachtet worden und Vonderau ließ im Umfeld dieses Brunnens graben (Abb. 2).[17]

Die Dokumentation erfolgte leider nur sehr summarisch,[18] wenn auch das Sieben des Aushubs im Jahr 1898 (Schnitte 1-4) zur Sicherung von Kleinstfunden und die

17 Müller 1996, 27-51; Joseph Vonderau wurde am 2. April 1863 geboren und ab 1880 am Lehrerseminar in Fulda ausgebildet. 1883 wurde er Lehrer in der Rhön und wechselte 1885 an die Fuldaer Domschule, wo er bis 1928 tätig blieb, seit 1901 als Rektor. Seit 1905 war er leitend im Fuldaer Geschichtsverein aktiv und unternahm zahlreiche Ausgrabungen zwischen 1898 und 1944. Das städtische Museum wurde 1938 nach ihm benannt. Er starb am 21. April 1951.

18 siehe auch Krause 2002, 35, 39 Anm. 65 und Vorlauf 2004, 26 Anm. 24. Nur von einem kleine Teil der Funde ist eine Schichtzuweisung bekannt.

vielfältige Kooperation mit Naturwissenschaftlern sehr modern wirken. Er legte sehr schnell eine vorläufige Beschreibung vor, der allerdings nie eine vollständige Publikation folgte.[19]

Die Mehrheit der zahlreichen Funde aus mehreren prähistorischen Perioden und dem Frühmittelalter wurden in zwei Kulturschichten (Abb. 2,A-B) unter Feuchtbodenbedingungen angetroffen. Darunter lagen massive Torfe. Die Kulturschichten wurden durch mehrere Nord-Süd-ausgerichtete Reihen von Pfählen gestört, die teilweise durch horizontale Balken verklammert waren. In dieser Schicht (Abb. 2,B) wurden außerdem massive Steinpackungen beobachtet. Abgeschlossen wurde sie durch eine dünne Brandschicht, die jedoch auch unverbrannte Knochen enthielt und in der die höchsten der Pfahlköpfe endeten (Abb. 2,C).

Vonderau und auch sein Nachfolger Hahn interpretierten diese Überreste als eine im Sumpf stehende langlebige prähistorische Pfahlbausiedlung ganz nach dem Vorbild der Schweizer Uferrandsiedlungen. Das Ende dieser Siedlung wurde zunächst in der Völkerwanderungszeit nach den sofort erkannten Fragmenten römischer Terra sigillata vermutet und schließlich aufgrund einer Riemenzunge auf um 700 datiert. Wichtig ist, dass dieses Enddatum entscheidend von den Angaben der Vita Sturmi abhängt, die die Klostergründung in der Ödnis beschreibt.[20]

Die so gewonnene Chronologie für die Funde aus der Langebrückenstraße, besonders die der frühmittelalterlichen Keramik, wurde bei zahlreichen weiteren Grabungen, so z.B. auf dem Büraberg, dem Glauberg und in Kloster Hersfeld, als Bezugspunkt benutzt. Auch die nahe dem Fuldaer Dom ergrabenen Reste einer mutmaßlichen *curtis* verdanken ihre merowingerzeitliche Datierung der völligen Gleichartigkeit der Keramik zu derjenigen aus der Langebrückenstraße.[21] Der Widerspruch zwischen diesem Chronologieschema und der Bestimmung eines Bronzefundes aus dem Komplex Langebrückenstraße als Schwertgurtbeschlag (Abb. 3) aus der Mitte des 9. Jahrhunderts wurde bisher nicht diskutiert, obwohl diese bereits seit 1969 vorliegt.[22]

3. Die Neubewertung der Funde

Im Rahmen eines kleinen Projekts der frühgeschichtlichen Abteilung des Instituts für archäologische Wissenschaften der Johann Wolfgang-Goethe-Universität Frankfurt/M. wurde 2001 in der Nähe der alten Grabung Vonderaus eine Fläche untersucht und die

19 Vonderau 1899; Nachträge in: Vonderau 1931, 48-49 Taf. II,11-23.

20 Ders. 1908, 55; ders. 1924; ders. 1931, 48-49; Lübeck 1949, 107-108 Anm. 69.

21 Vonderau 1946, 13, 19-26, Abb. 13, Abb. 16; Hahn 1954. 29-42 et *passim*; Krause 2002, 11.

22 Werner 1969, 498, 501-502, Taf. 26,b; Kind 2003a, 141 Abb. 172,1. Schon Hahn 1954, 47 räumt das Vorhandensein jüngerer Funde ein, ohne die Konsequenzen für das Chronologiegerüst Vonderaus zu erkennen

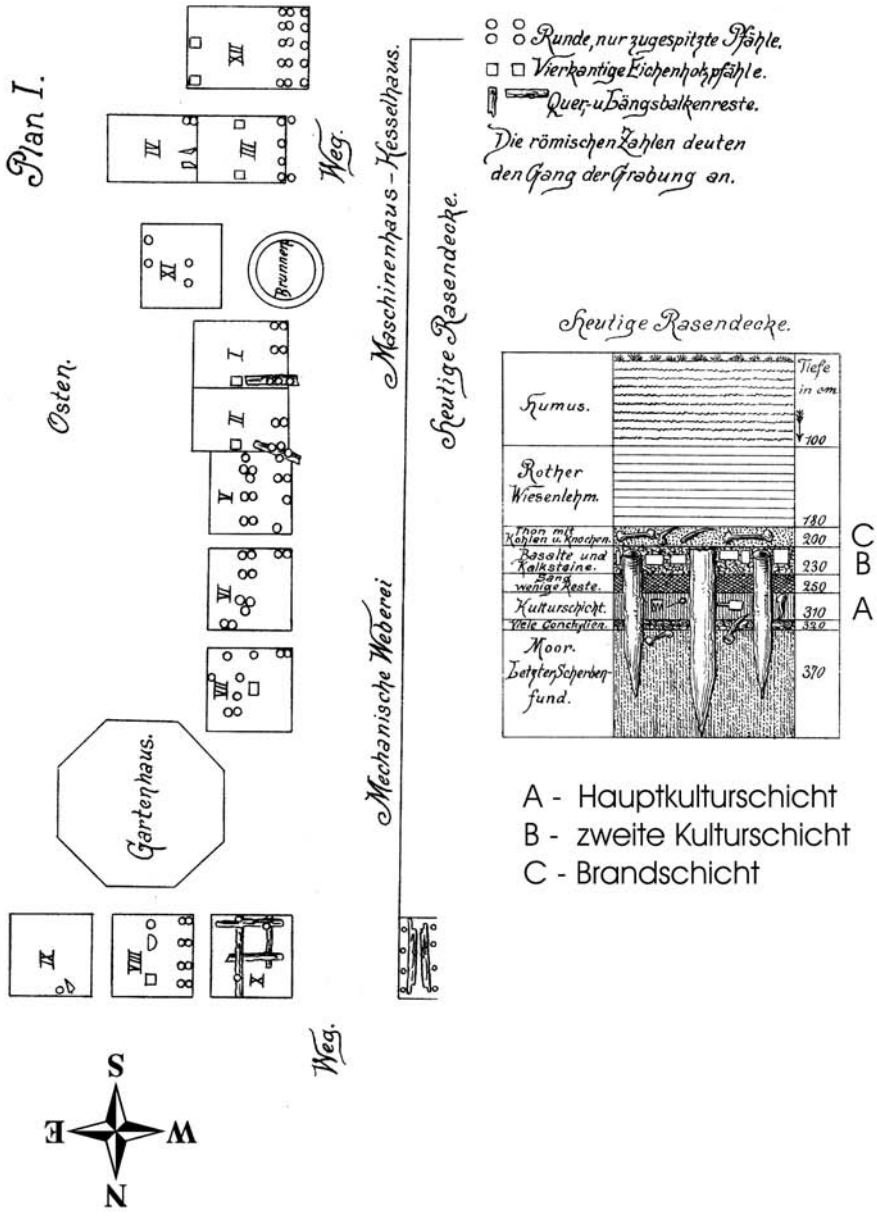

Abb. 2. Die archäologischen Befunde in der „Langebrückenstraße“

Funde der Altgrabung durchgesehen und gezeichnet. Dieser neue Schnitt liegt wie auch die Untersuchungen durch Müller und Rittweger tiefer im Tal und erbrachte den Nachweis, dass die Torfe sich nicht im gesamten Flusstal, sondern nur in einzelnen Rinnen gebildet haben und in ihrem Hangenden außerdem dünne limnische Kalke vorhanden waren. Radiokarbondaten konnten die Torfbildung in das 9./8. Jahrtausend v. Chr. datieren, somit kann allenfalls eine mesolithische Station zeitgleich zur Torfgenese gewesen sein. Da bisher keine nachchristlichen Pfahlbauten nördlich der Alpen sowie im gesamten Mittelgebirgsraum generell keine Pfahlbauten bekannt geworden sind, ist die geologisch-historische Interpretation des Befundes durch Vonderau im Sinne eines kontinuierlich über Jahrtausende genutzten Pfahlbaus über zeitgleich gebildeten Torfen widerlegt.[23]

Die Funde aus der Langebrückenstraße belegen aber die Anwesenheit von Menschen in der Bronze- und Eisenzeit sowie in der Römischen Kaiserzeit; diese sind jedoch nicht Gegenstand der vorliegenden Betrachtung. Die meisten Funde wurden im Vonderau-Museum aufbewahrt und standen für eine Durchsicht zur Verfügung, lediglich einige Metallfunde, die botanischen Reste und die meisten Tierknochen sind verschollen. Die Ergebnisse der Neubewertung der Funde können an dieser Stelle aus Platzgründen nur kursorisch aufgezählt werden, ihre ausführliche Vorlage ist in Vorbereitung.[24]

3.1. Metallfunde

Dass es sich bei dem erwähnten Bronzebeschlag nicht um einen einzelnen Streufund ohne Zusammenhang mit den genannten Kulturschichten handelt, belegen weitere karolingerzeitliche Metallfunde. So gehört eine Knopfriemenzunge kleinen Formats zum sogenannten Tassilokelchstilhorizont, der der zweiten Hälfte des 8. Jahrhunderts zugewiesen werden kann. Ein gestielter Ösenbeschlag muss der Zeitspanne zwischen um 800 und dem frühen 10. Jahrhundert zugeordnet werden.

Eine Besonderheit stellt ein bleierner Spinnwirtel dar (Abb. 3,2), für den Parallelen bisher nur aus zentralen Plätzen der Karolingerzeit genannt werden können. Soweit diese datierbar sind, stammen sie aus Komplexen des mittleren und späten 9. Jahrhunderts. Einige Messer mit geknicktem Rücken (Abb. 3,6.7) und ein Spornfragment können leider nur als allgemein frühmittelalterlich bezeichnet werden.

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23 Müller/Rittweger 2001, 227-229, 232-234; Kind 2003, 215-225 Abb. 1-4.

24 Für Hilfe, Unterstützung und Übersetzungen im Zusammenhang mit dieser Neubewertung habe ich zu danken: Prof. Dr. Joachim Henning, Prof. Dr. Karl-Hans Wedepohl, Dr. Andreas Kronz, Dr. Markus Sanke, Prof. Dieter Hägermann, PD Dr. Detlef Gronenborn, Dr. Andreas Thiedmann, Dr. Christoph Keller, Dr. Andreas Vogel, Dr. Volker Grünewald, Dr. Ingo Gabriel, Dr. Georg Eggenstein, Wolfram Giertz, Tim Bunte M.A., Dr. Britta Ramminger, Dr. Nicole Rupp, Diertrich Diercksen M.A., Jeanette Werning M.A., Pia Kühltrunk M.A..

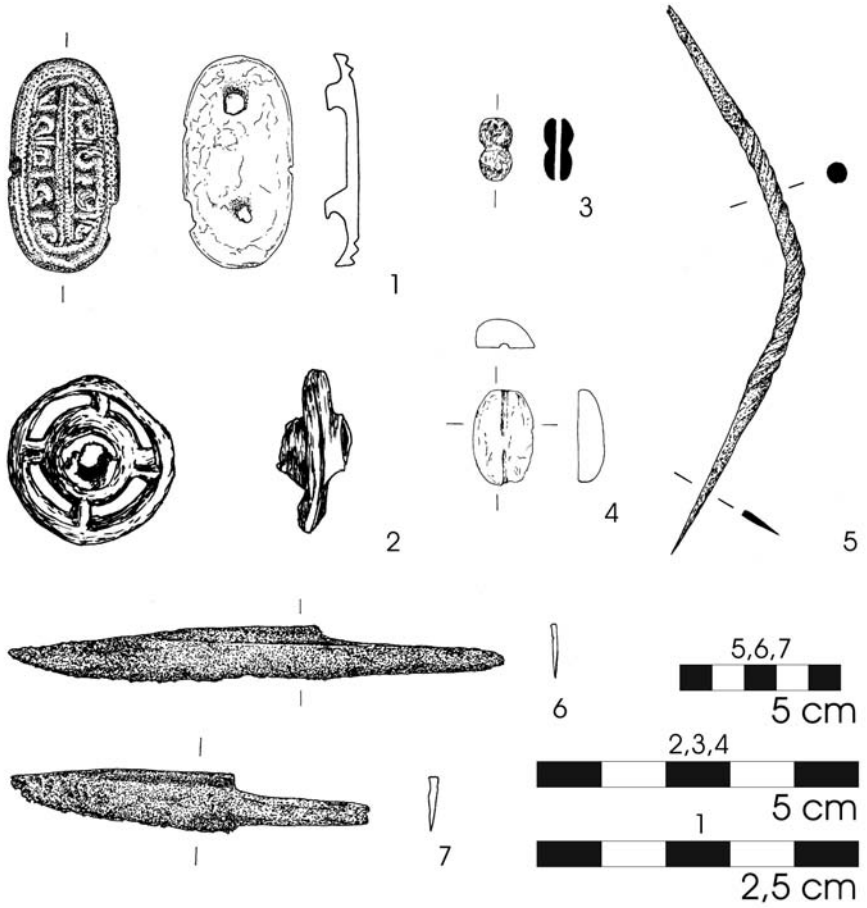


Abb. 3. Auswahl von Funden aus Metall, Glas und Bergkristall aus der „Langebrückenstraße“

Eine Rarität, wenn auch ohne Wert für die Chronologie, ist eine Kesselgabel, also ein Küchengerät zum Sieden von Fleisch. Für die oben genannte Riemenzunge, die wegen ihres angeblich merowingerzeitlichen Alters das Ende der Besiedlung definieren sollte, kann bis dato trotz des seit den Publikationen Vonderaus enormen Materialzuwachses aus den Reihengräbern keine passende, tatsächlich merowingerzeitliche Parallele benannt werden.

3.2. Geweihfunde

Die Herstellung von Dreilagenkämmen in allen Fertigungsschritten kann anhand des umfangreichen Materials aus Rothirschgeweih (Abb. 4) nachgewiesen werden. Es wurden sowohl schädelechte als auch Abwurfstangen verarbeitet. Die meisten fertigen Kämme sind chronologisch unempfindlich, ein überlanges Exemplar findet Parallelen in der späten Merowingerzeit. Eine besondere, bisher kaum behandelte Gruppe vertreten hingegen die beiden Fragmente von Kämmen mit seitlicher Griffplatte (Abb. 4,19.20). Diese erscheinen erstmals in der Zeit um 600, häufiger sind sie im mittleren und späten 7. Jahrhundert belegt. Die meisten Belege datieren jedoch in die späte und ausgehende Merowingerzeit. Offensichtlich kam die Form jedoch nicht mit dem Ende der Beigabensitte außer Mode, da eine typologische Spätform der Gruppe aus der ältesten Schicht in Haithabu stammt, also um 800 in den Boden gekommen sein muss. Die Form kommt außerhalb des Reihengräberkreises auch in Frankreich, Italien, beiderseits des Niederrheins und in Südengland vor und muss wahrscheinlich aus diesen romanischen/stark romanisierten Gebieten abgeleitet werden.

Eines der genannten Fragmente sowie ein weiterer Kamm tragen zudem ein mit dem Zirkel konstruiertes Flechtbandornament (Abb. 4,14.19). Dieses Ornament war in der gesamten Mediterraneis schon während der Antike allgemein verbreitet. Im europäischen Frühmittelalter (600-900) ist dieses Dekor jedoch ausschließlich in den romanischen und romanisierten Regionen belegt, es fehlt hingegen in Skandinavien (außer Birka) und im slawischen Siedlungsraum (mit Ausnahme Großmährens). Die mehrfach vorgeschlagene Bindung dieses Ornaments an das langobardische Italien kann anhand der Verbreitungskarte nicht bestätigt werden. Handgemachte Flechtbänder sind hingegen allgemein verbreitet.

3.3. Holzfunde

Ungewöhnlich, vor allem für einen Altfundkomplex, ist die Erhaltung von Holzfunden – es handelt sich fast ausschließlich um Buchenholz–, da Vonderau glücklicherweise ein geeignetes Konservierungsmittel fand. Besonders wertvoll sind die Funde für die absolute Datierung des Fundkomplexes Langebrückestraße. Mittels der Dendrochronologie konnten insgesamt 28 Proben datiert werden (Abb. 5). Da bei allen die Splintgrenzen fehlen, kann nur der jeweils frühestmögliche Fällzeitpunkt bestimmt werden. Die meisten verweisen ins 9. Jahrhundert (21 Proben), die drei jüngsten auf um/nach 875 bzw. 876.[25]

25 Die Analyse wurde von Dr. T. Westphal, J. W. Goethe-Universität Frankfurt/M. (Labor-Nr. Ffm 2220-2365) durchgeführt. Sein Gutachten betont die Möglichkeit des Übersehens von Splintgrenzen durch die starke Einfärbung des Holzes infolge des Konservierungsmittels.

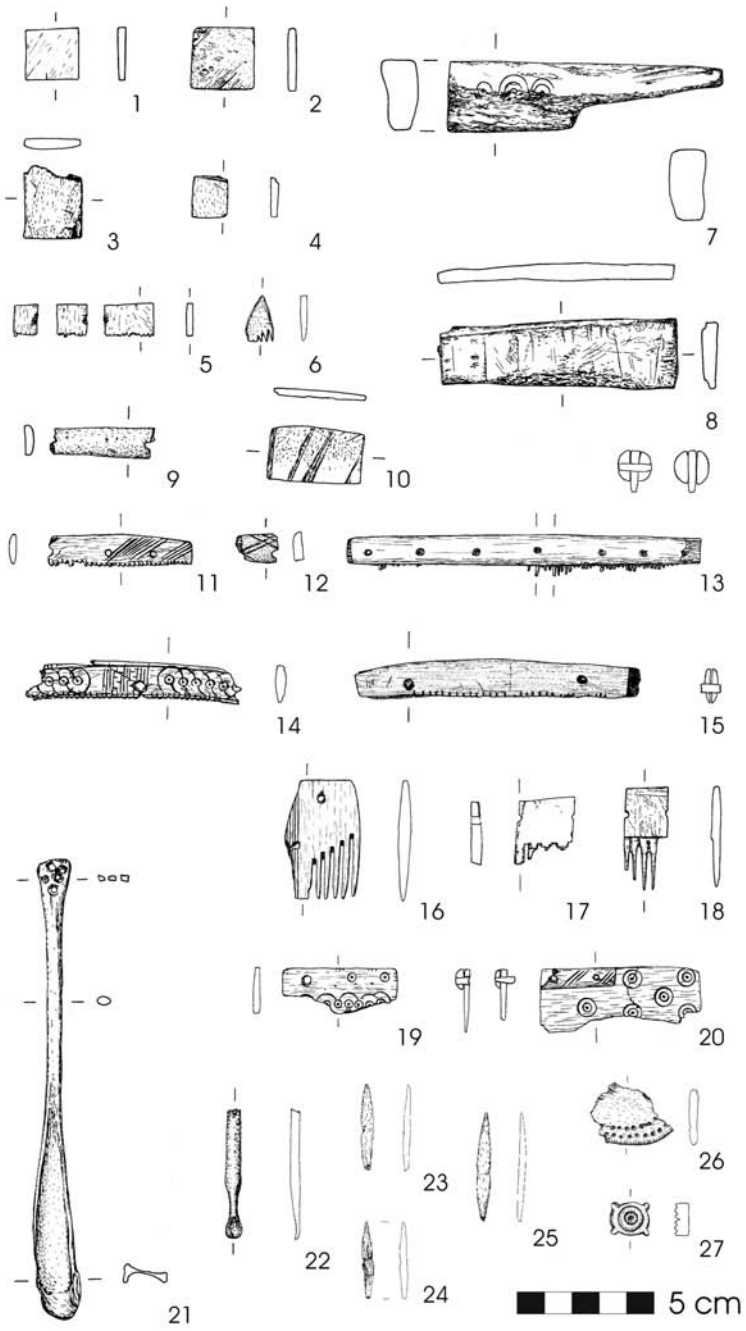


Abb. 4. Auswahl der Geweihfunde aus der „Langebrückenstraße“

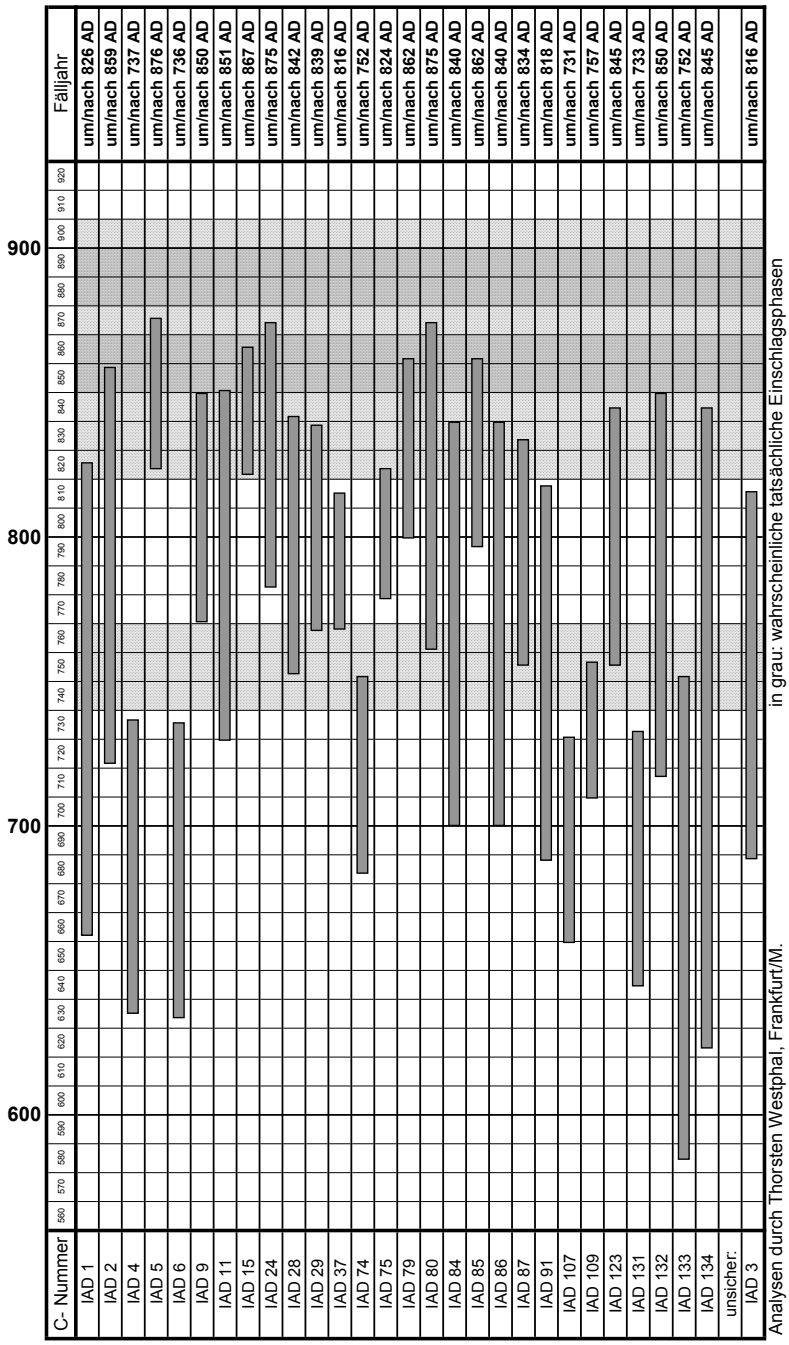


Abb. 5. Die dendrochronologischen Daten der Holzfunde aus der „Langebrückenstraße“

Mit diesen Daten sind die Chronologievorstellungen Vonderaus und Hahns endgültig und unabhängig von archäologischen Typologien widerlegt.

Weiterhin sind die Formen der Hölzer interessant. Insgesamt sind 38 paddelförmige Hölzer bzw. deren Fragmente erhalten (Abb. 6,1-17), die von Vonderau noch als Spaten angesprochen wurden. Inzwischen ergrabenene Fundkomplexe von Dasing bei Augsburg, Greding in der Fränkischen Alp und Audun-le-Tiche, Dép. Moselle, sichern jedoch ihre Interpretation als Teile von vertikalen Mühlrädern. Besonders wertvoll sind hierbei die teilweise erhaltenen Räder in Dasing (Abb. 7, Innendurchmesser 1,60 m) und Audun-le-Tiche (Innendurchmesser 1,80 m), auf denen noch einige der ehemals wohl 24 Paddel saßen. Da in Fulda verschiedene Größen dieser Paddel vorhanden sind, könnten diese von verschiedenen Rädern stammen. Drei kleine Hölzer mit einseitiger Abnutzung (Abb. 6,18-20) können aus Kammen gedeutet werden, stammen also aus dem Kammrad, einem Bestandteil des Getriebes. Solche Getriebe gibt es nur an Mühlen mit vertikalem Rad.

Alle genannten Mühlenkomplexe konnten dendrochronologisch dem 9. Jahrhundert zugewiesen werden, einige beginnen bereits im 7./8. Jahrhundert. Außer in Greding handelt es sich stets um Buchenholz. Da in der Langebrückenstraße keine Reste von Mühlsteinen oder vom Gerinne trotz der im Vergleich zu Holzteilen deutlich höheren Erhaltungswahrscheinlichkeit beobachtet wurden, muss die Mühle selbst (vorzustellen in einem kleinen Gebäude etwa wie Abb. 7) woanders, vermutlich aber in der Nähe gestanden haben. Generell sind derartige Mühlenbefunde selten im mittelalterlichen Europa (Abb. 8), was jedoch vor allem auf den Forschungsstand zurückgeführt werden muss. Auffallend ist jedoch, dass auf dem Kontinent fast ausschließlich vertikale Mühlen belegt sind, während auf den Britischen Inseln horizontale Mühlen überwiegen, vertikale Mühlen jedoch durchaus vorkommen und auffallenderweise die ältesten dort sind.

Wassergetriebene Mühlen stellen ein Erbe der Antike dar, beide Formen sind aus der Römischen Kaiserzeit in den Schriftquellen und archäologisch nachgewiesen. Sie waren außerdem deutlich stärker verbreitet als lange angenommen wurde.[26] Es besteht heute kein Grund mehr, an einer Kontinuität der Nutzung der Wasserenergie zwischen Antike und Mittelalter zu zweifeln. Die Nennung in den germanischen Volksrechten, einzelne Erwähnungen zwischen dem 4. und dem 6. Jahrhundert und die kontinuierliche Produktion von Mühlsteinen unterstreichen dies. Die Träger dieser Kontinuität, besonders der Anteil des Adels daran, sind jedoch noch strittig. Erschwert wird eine Beurteilung dieser Frage dadurch, dass Mühlen in den Schriftquellen meist nur als Bestandteil von Schenkungen, also beim Wechsel aus adeligem Besitz in kirchlichen, erscheinen. Die Repräsentativität dieses Bildes kann jedoch sehr wohl angezweifelt

26 Böhme 1999, 27-42 Abb. 7-10; Böhme 2002, 287-288; Hägermann 1991, 346-347, 351-355; Lohrmann 1997, 224-225; Lohrmann 2002, 282-283; Brun/Borréani 1999, 307-317 Abb. 35 (Karte); Amouric et. al. 2000, 262-269, Abb. 8-9.

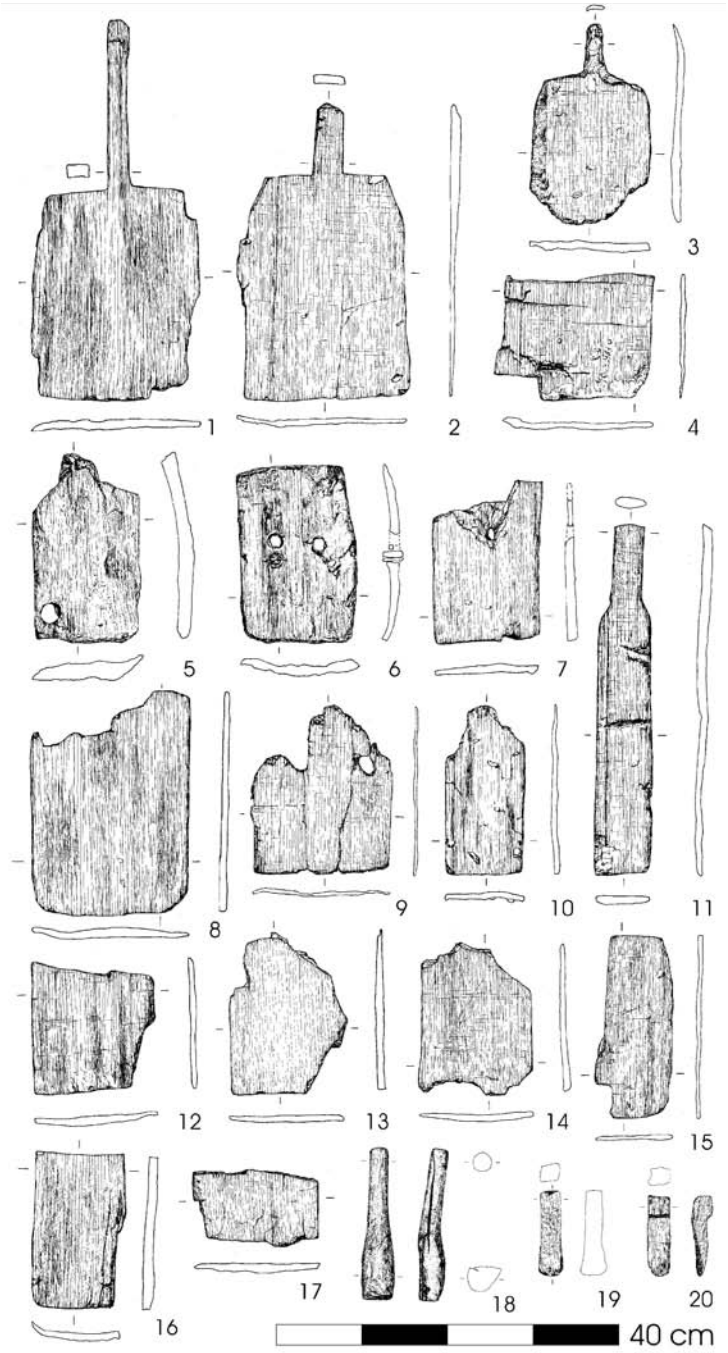


Abb. 6. Auswahl der Holzfunde aus der „Langebrückenstraße“

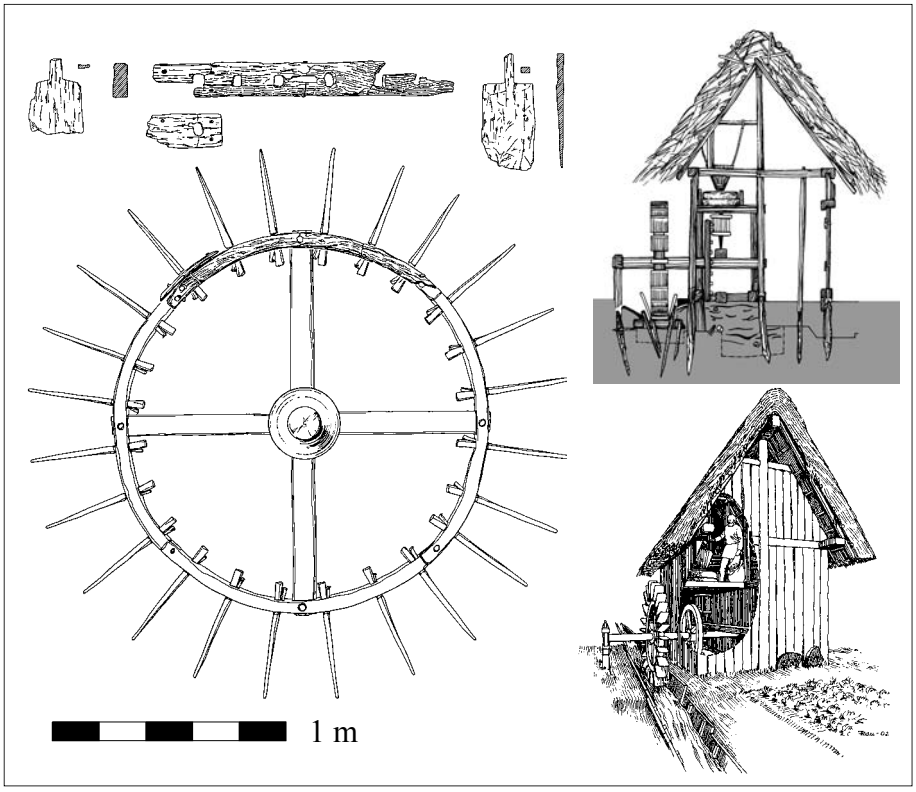
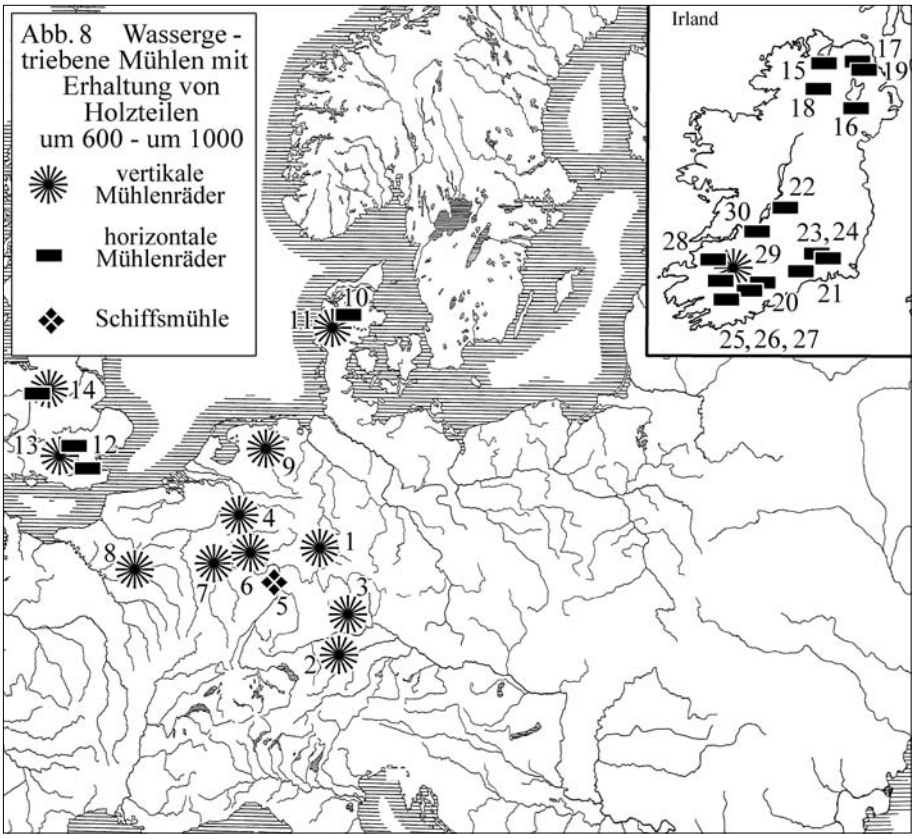


Abb. 7. Funde und Rekonstruktionen der Mühle von Dasing bei Augsburg

werden. In jedem Fall trugen auch die Klöster zum Erhalt der antiken Mühlentechnologie bei, wie sich beginnend mit den Beschreibungen für die Klöster Condate (später Saint-Claude) im Jura und Loches an der Indre im späten 5. Jahrhundert nachweisen lässt. Für die Karolingerzeit sind beispielsweise die *provendarii ad molinum* des Klosters Corbie, die unmittelbar zum Personal des Klosters gehörten und für die Mühlen am Klosterkanal verantwortlich waren, die Mühlen des Klosters Corvey und die Wassermühle, die ein Kanal durch das Kloster St. Riquier antrieb, zu nennen. Auch Fulda gehört hierher, da zu dem Nutzen des in Kapitel 1 bereits erwähnten Kanals der *fluminis impetus* gehörte, also die Wasserkraft, die in dieser Zeit nur auf eine Mühle bezogen werden kann.[27] Insofern besteht hier eine direkte Vergleichsmöglichkeit zwischen der

27 Richter 1900, 42, 54-55; Henning 1994, 8-15; Böhme 1999, 49-53 Abb. 18; Damminger 2000, 222, 224; Elmshäuser 1992, 8-12, 20-23; Horn 1975, 233, 249; Lohrmann 1992, 186; Lohrmann 1997, 221-226, Anm. 21; Lohrmann 2002, 282; Hägermann 1991, 348-368, 371-375; Stephan 2000, 194, 336.



1. Fulda, Kr. Fulda, Hessen; 2. Dasing, Lkr. Aichach-Friedberg, Bayerisch Schwaben, Bayern; 3. Großhöbing, Gde. Greding, Lkr. Roth, Mittelfranken, Bayern; 4. Erftstadt-Niederberg, Rhein-Erft-Kreis, Nordrhein-Westfalen; 5. Gimbsheim, Kr. Alzey-Worms, Rheinland-Pfalz; 6. Udler, Kr. Daun, Rheinland-Pfalz; 7. Audun-le-Tiche „Steinacker", Dép. Moselle, Lothringen/ Lorraine, Frankreich; 8. Belle Eglise „Pré les Paillards", Dép. Oise, Picardie, Frankreich; 9. Bronneger, Gem. Borger, Prov. Groningen, Niederlande; 10. Ljørring, Ksp. Aulum, Hammerum herred, Amt Ringkøbing, Jütland, Dänemark; 11. Omgård, Ksp. Nørre Omme, Amt Ringkøbing, Jütland, Dänemark; 12. Northfleet, Gravesend, Kent, England, Großbritannien; 13. Old Windsor, Berkshire, England, Großbritannien; 14. Tamworth, Staffordshire, England, Großbritannien; Irland: 15. Drumard, Co. Derry, Nordirland, Großbritannien; 16. Maghnavery, Co. Armagh, Nordirland, Großbritannien; 17. Rasharkin, Co. Antrim, Nordirland, Großbritannien; 18. Rossorry, Co. Fermanagh, Nordirland, Großbritannien; 19. Moycraig, Co. Antrim, Nordirland, Großbritannien; 20. Ballydowane West, Co. Waterford, Munster; 21. Ballygeardra, Co. Kilkenny, Leinster; 22. Ballykilleen, Co. Offaly, Leinster; 23. Ballyrafton, Co. Kilkenny, Leinster; 24. Brabstown, Co. Kilkenny, Leinster; 25. Cloontycarthy, Co. Cork, Munster; 26. Farranmareen, Co. Cork, Munster; 27. Keelaraheen, Co. Cork, Munster; 28. Knocknagranshy, Co. Limerick, Munster; 29. Little Island, Co. Cork Munster; 30. Morett, Co. Laois, Leinster

Abb. 8. Frühmittelalterliche Funde von wassergetriebene Mühlen mit Holzerhaltung

schriftlichen und der archäologischen Quelle. Beachtenswert ist dabei, dass die übrigen Schriftquellen bei traditioneller Betrachtung eher keine Wassermühle in und um Fulda erwarten liessen, da das Chartulare von Fulda (um 830) nur sieben Mühlen und darunter 3 fabricae im fernen und ehemals romanisierten Mainz verzeichnet und sich damit deutlich von Lorsch (90 Mühlen) und den großen Klöstern links des Rheins ebenfalls mit jeweils einer vielfachen Mühlenzahl unterscheidet.[28]

Es entbehrt nicht einer gewissen Ironie, dass während des intensiven Streits der Historiker um den Antrieb der auf dem St. Galler Klosterplan verzeichneten Mühlen, hinter dem eigentlich der Streit um den Charakter des Plans als Dokument technologischer Innovation stand, die unmittelbare Antwort in einem Regal des Vonderau-Museums schlummerte. Einige Historiker glaubten sogar, einen Wasserantrieb der Mühlen aufgrund der Lärmbelästigung ausschließen zu können, übersahen dabei jedoch die übrigen Werkstätten auf dem Plan (darunter Schmiede!) und die gerade erwähnte Nennung aus St. Riquier. Hauptgegenstand dieses Streits waren ohnehin eigentlich die Rolle der Klöster bei der Antikenrezeption sowie der Zeitpunkt und die Trägerschaft von Innovation im Mittelalter generell.[29] Fest steht, dass Wassermühlen schon in der Karolingerzeit normale Bestandteile jeder größeren Siedlungskammer und jeder Klosterökonomie waren. Fulda ist jedoch der erste und bislang einzige unmittelbare Beleg für eine Wassermühle direkt neben einem frühmittelalterlichen Kloster in Europa (Abb. 8).

3.4. Keramik

Von den rund 1000 Scherben des Fundkomplexes sind die allermeisten handgeformt (Abb. 9) und auf der langsamen Drehscheibe geglättet. Nur einzelne davon sind mit Kammstrichwellen auf der Gefäßschulter und dem Rand verziert (Abb. 10). Chronologisch ist diese Ware unspezifisch. Ähnliche Keramik wurde auch andernorts in Nord- und Osthessen gefunden und ist als merowingerzeitlich bestimmt worden; ihre zeitliche Bestimmung hängt jedoch mehrheitlich vom Komplex aus der Langebrückenstraße ab. Inzwischen kann auch an anderen Fundstellen anhand der Vergesellschaftung mit Metallfunden (z.B. mit Teilen der Reitausrüstung des 10. Jahrhunderts) gezeigt werden, dass dieses Datierungsmodell nicht stimmen kann. Die Verzierung mit Kammstrichwellen, besonders auf den Rändern, findet auch in Westthüringen gute Parallelen.

28 Lohrmann 2002, 285-286; Hägermann 1991, 365.

29 Horn 1975, 223-236 Abb. 1; 4; 5; 15; Lohrmann 1992, 182-188 Abb. 1-2; Henning 1994, 16 Anm. 103; Hägermann 1990, 1-18; ders. 1991, 351-356; Elmshäuser 1992, 13 Anm. 121; Schwind 1984, 104-109, 115, 121-122, Anm. 29, Abb. 1; Capelle 1999, 425-427.

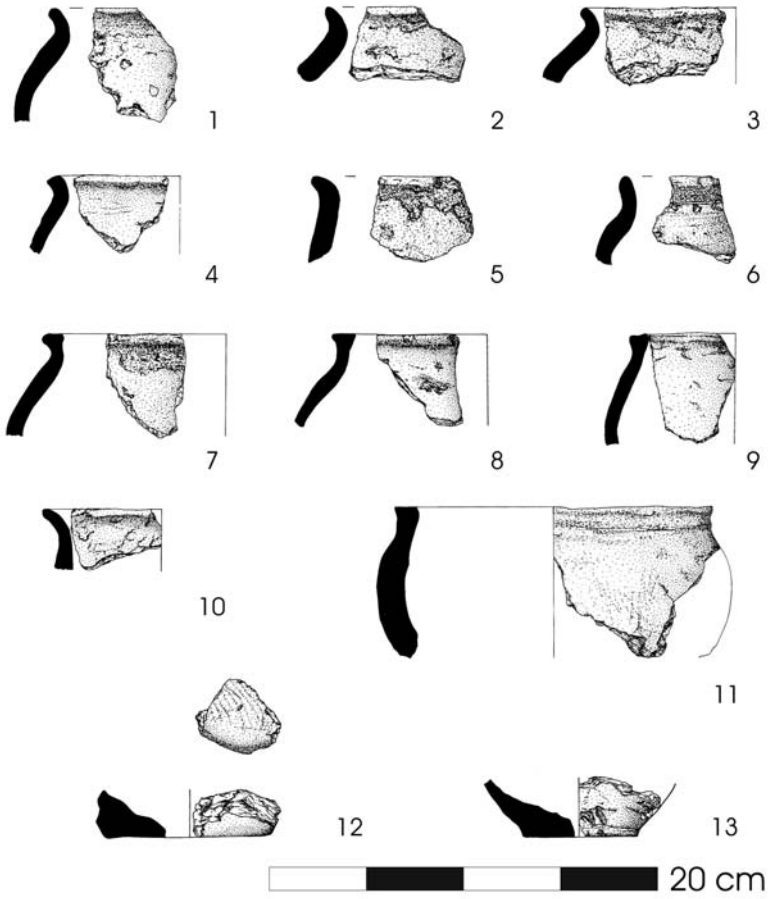


Abb. 9. Auswahl der handgemachten und langsam nachgeglätteten Keramik ohne Verzierung aus der „Langebrückenstraße“

Die gesamte handgeformte und nachgedrehte Ware vertritt jedoch sicherlich die einheimische Keramik des unmittelbaren Umfelds des frühmittelalterlichen Klosters und liefert daher keinen Hinweis auf wirtschaftliche Fernkontakte.

Weiterhin gibt es einige wenige Belege für Produkte der schnellen Töpferscheibe (Abb. 11). Es handelt sich um gelbe und rote ältere Drehscheibenware mit stark profilierten Schultern und scharfkantigen Rändern sowie um helltonige Ware mit quadratischer und rautenförmiger mehrzeiliger Rollstempelzier. Diese Ware ist im mittleren und oberen Rheintal, dem Neckarraum sowie im unteren und mittleren Maintal verbreitet und offenbar von dort nach Fulda importiert worden. Chronologisch gehört sie vor allem in die Karolingerzeit. Ein direkter Bezug zum Badorfer Typ kann ausgeschlossen werden,

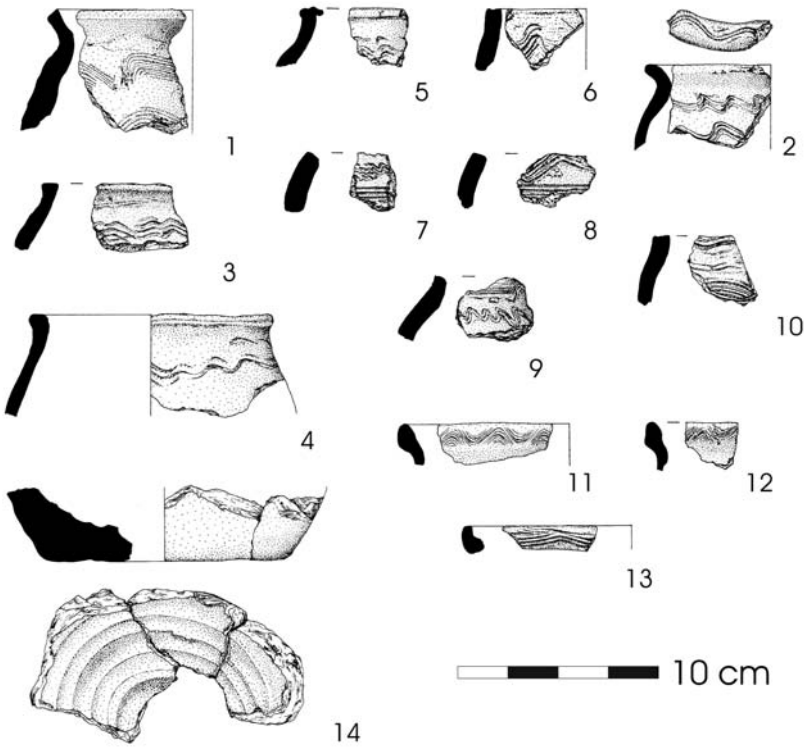


Abb. 10. Auswahl der handgemachten und langsam nachgeglätteten Keramik mit Kammstrichverzierung sowie ein Gefäßboden mit schneckenförmigen Drehspuren aus der „Langebrückenstraße“

es muss von einer Nachahmung, wohl aus dem rechtsrheinischen Gebiet, ausgegangen werden. Untypisch ist ein Deckel mit Rollstempelzier (Abb. 11,4). Derartiges ist im echten Badorf unbekannt und erscheint auch sonst nur vereinzelt. Wie die mehrzeiligen Rollerstempelverzierungen ist er eine eher späte Erscheinung (9./10. Jahrhundert). Einige weitere Keramikstücke könnten ebenfalls aus der Endphase des Komplexes stammen (Abb. 12). Generell und unabhängig von der Typologie stimmt der Fuldaer Fundkomplex sehr gut mit denjenigen der Klöster Corvey und Lorsch überein, wo ebenfalls das Gros der Keramik lokaler und regionaler Herkunft ist (aus einem Umkreis von maximal 150 km) und deutlich weniger als 10% aus dem Fernhandel stammen.[30] Die engsten Parallelen für das beschriebene Keramikspektrum, also die Kombination aller in Fulda angetroffener Waren, sind jedoch in Unterfranken gefunden worden. Eine enge Beziehung zu diesem Raum ist auch anhand der Schriftquellen wahrscheinlich (Schenkung von Hammelburg 777).[31]

30 Stephan 1994, 214-215; ders. 2000, 349; Sanke 2004, 143-149, 152-160, 181, 234 Abb. 21.
31 Richter 1900, 62.

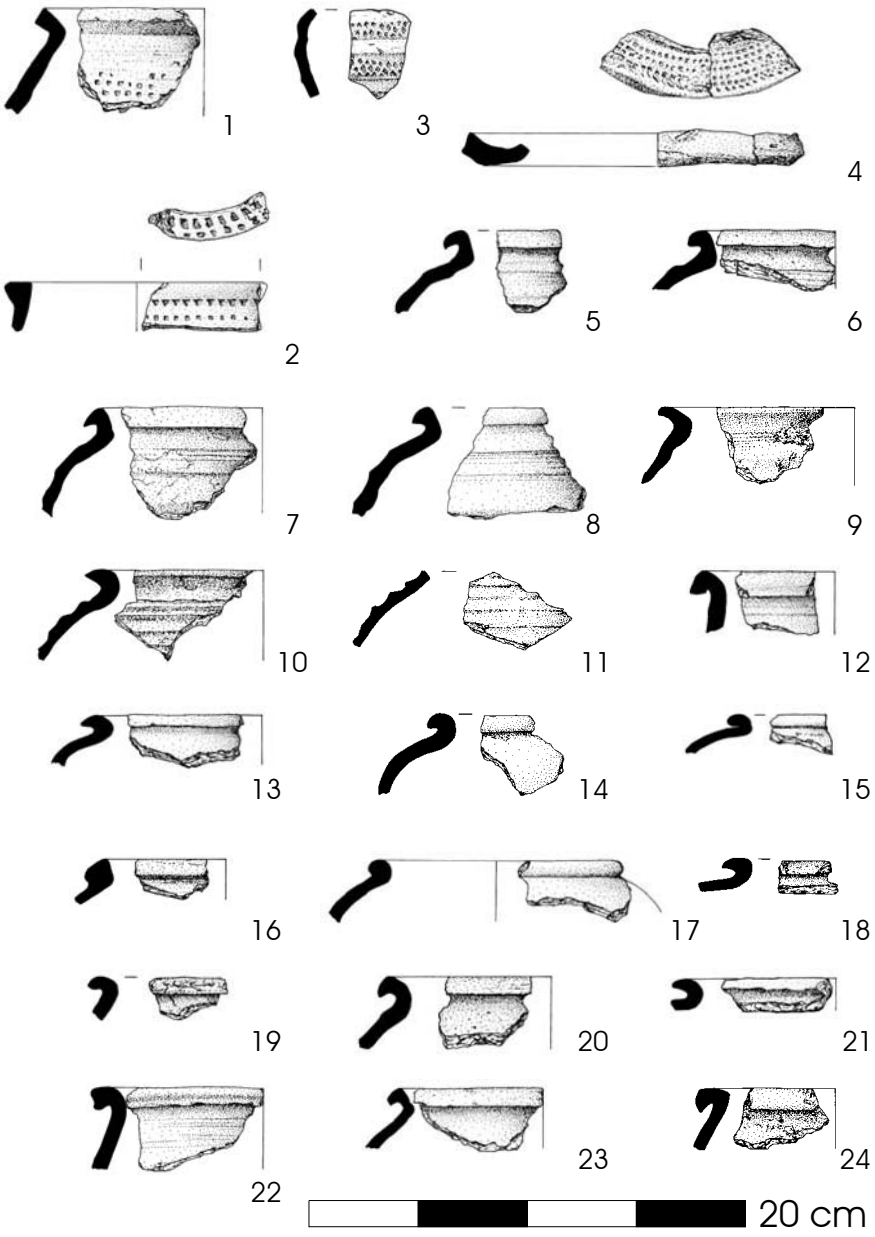


Abb. 11. Die Drehscheibenkeramik aus der „Langebrückenstraße“, z.T. mit Rollstempelverzierung

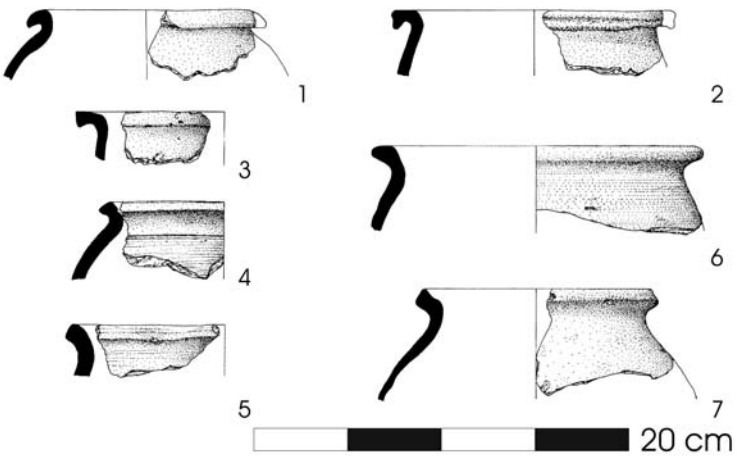


Abb. 12. Die jüngste Drehscheibenkeramik des Komplexes aus der „Langebrückenstraße“

3.5. Perlen und Knochen

Zwei Perlen wurden gefunden: eine kleine stark korrodierte Doppelperle von unbestimmbarer Farbe und die Hälfte einer ovalen Perle aus Bergkristall (Abb. 3,3.4). Chronologisch sind sie wenig aussagekräftig, auch wenn Doppelperlen in der Merowinger- und Karolingerzeit vergleichsweise häufig belegt sind. Die große Perle weist eine unvollständige Durchbohrung auf, ist also vermutlich während der Herstellung längs gesprungen. Somit kann eine solche Produktion in Fulda nachgewiesen werden. Bemerkenswert sind sechs Glättknochen, die aus Radien und Metapodien von Pferd und Rind hergestellt wurden. Sie dienten der Bearbeitung von Tierhäuten; in einem Kloster ist man natürlich versucht, an die Herstellung von Pergament zu denken. Ein kleines quadratisches Plättchen ist ein Webbrettchen und diente der Herstellung von Borten u.ä., eine seit der Eisenzeit übliche Gebrauchsform. Ein kleiner Löffel muss wohl als Ohrlöffelchen interpretiert und dem Toilettbesteck zugewiesen werden (Abb. 4,22). Drei kleine Knebel aus Bein (Abb. 4,23-25) könnten nach einer Parallele aus einem Grab um oder kurz nach 700 als Kleidungsschließen gedient haben.[32] Die übrigen unbearbeiteten Knochen spiegeln das Nahrungs- und Nutztierspektrum wider, die Nachweise für Schwein, Rind, Schaf/Ziege und Hund entsprechen in etwa dem Befund anderer frühmittelalterlicher Siedlungen wie auch dem des Klosters Corvey.[33] Es fehlen Exoten, Jagdhelfer und überraschenderweise, aber vermutlich wegen der Kleinheit der Knochen erklärlich, Fische.

32 Neuses a.d. Regnitz, Lkr. Forchheim, Grab 2: Haberstroh 1998, 247-249, 268 Abb. 10, 39-40 Taf. 10,3.

33 Stephan 2000, 336-337.

3.6. Glasfunde und Schlacken

In dem Fundkomplex waren außerdem 47 Glasscherben und Scherben einiger Tiegel mit Resten von Glasschmelz enthalten. Die Gläser sind alle so stark fragmentiert, dass keine ursprünglichen Formen mehr rekonstruiert werden können. Es kommen sowohl flache als auch gewölbte Gläser vor, es sind daher sowohl Glasfenster als auch Glasgefäße nachweisbar. Die Farbe Grün in hellen und dunklen Varianten dominiert, wie das auch von anderen karolingerzeitlichen Fundplätzen bekannt ist. Daneben sind Blau und Rot belegt.

Erfreulicherweise konnte eine Auswahl der Gläser analysiert werden.[34] Die meisten erwiesen sich als Soda-Kalk-Gläser, die seit römischer Zeit kontinuierlich vorherrschende Rezeptur in West- und Mitteleuropa. Wie bei vielen anderen frühmittelalterlichen Glasverarbeitungsplätzen in West- und Mitteleuropa sowie in Italien, ließ sich auch hier die Verwendung römischer Mosaiksteine (*tesserae*) für die Einfärbung des Glases indirekt nachweisen. Auch der in Fulda gefundene *tessera* war vermutlich als Rohmaterial vorgesehen. Daneben konnte aber auch Holzascheglas nachgewiesen werden, eine Entwicklung der Karolingerzeit, die erstmals in einer Zerstörungsschicht der Pfalz Paderborn (778 oder 793/4) belegt ist. Insofern hat dieser Nachweis für die Fundstelle Langebrückenstraße auch chronologischen Wert. Im Gegensatz zum Soda-Kalk-Glas konnte diese Rezeptur ausschließlich aus einheimischen Rohstoffen hergestellt werden. Allerdings war Soda-Kalk-Glas bezüglich Färbbarkeit und Verwitterungsbeständigkeit überlegen.

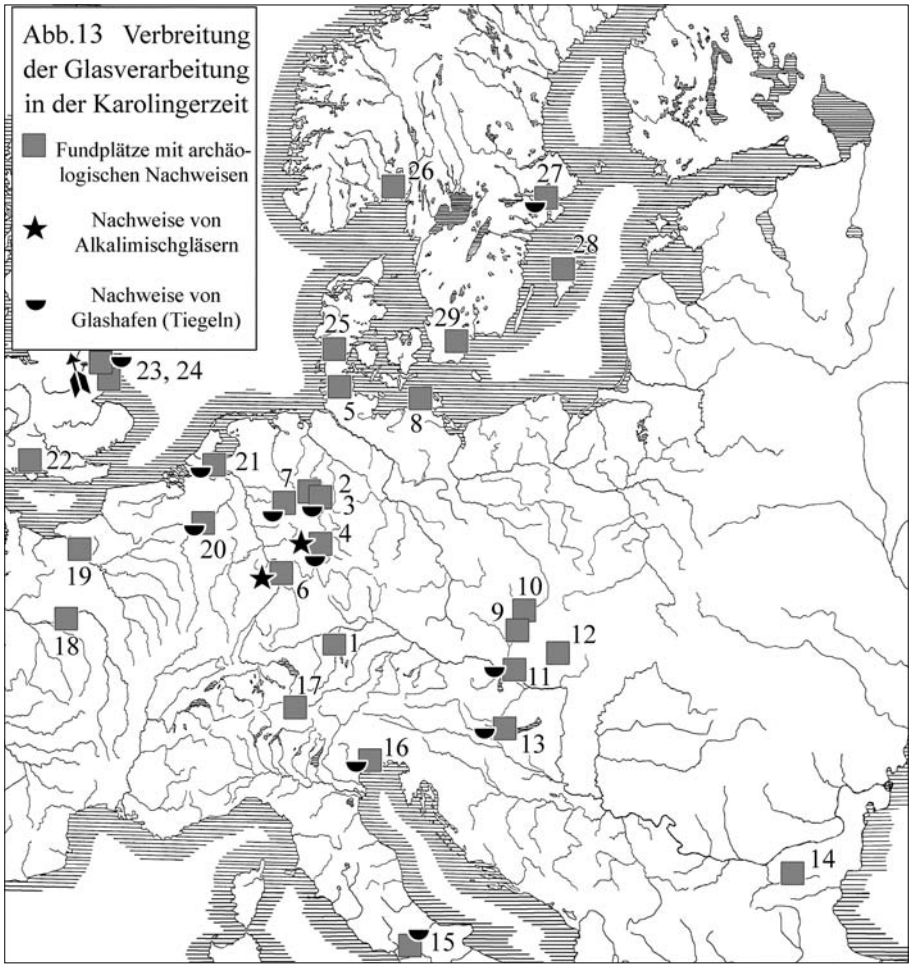
Ebenfalls konnten in Fulda Alkalimischgläser nachgewiesen werden, für deren Herstellung dieses Soda-Kalk-Glas mit Holzascheglas gestreckt wurde. Offensichtlich bereitete der bedarfsdeckende Import von Trona bzw. fertigem Soda-Kalk-Glas Schwierigkeiten. Solche Mischgläser sind bisher neben Fulda nur aus dem Kloster Lorsch bekannt geworden. Auch generell sind gerade die Analyseergebnisse aus diesen beiden Klöstern sehr ähnlich, so dass der Austausch von Handwerkern oder Rohmaterialien vorstellbar ist.[35]

Das Vorhandensein von Tiegeln, die Reste von Soda-Kalk-Glas enthielten, sowie ein Glastropfen belegen unmittelbar eine Glaswerkstatt in Fulda. Derartige archäologische Nachweise liegen bisher ausschließlich von zentralen Orten der höchsten Kategorie, den Fernhandelsemporien, den Herrschaftszentren und den großen Klöstern, vor (Abb. 13).[36] Umfang und Dauer von dieser Glasverarbeitung in Fulda können

34 Die Analysen wurden dankenswerterweise von Prof. Wedepohl, Göttingen, vorgenommen. Zu den Daten und den Ergebnissen siehe: Kind/Wedepohl/Kronz 2004, 79-87 Tab. 1-3, Abb. 5-6; Wedepohl 2003, 119-149, Tab. 3, Abb. 4, Abb. 7, Abb. 9; ders. 2003a, 73-95 Tab. 6A, Tab. 19 A, Abb. 30, Abb. 41.

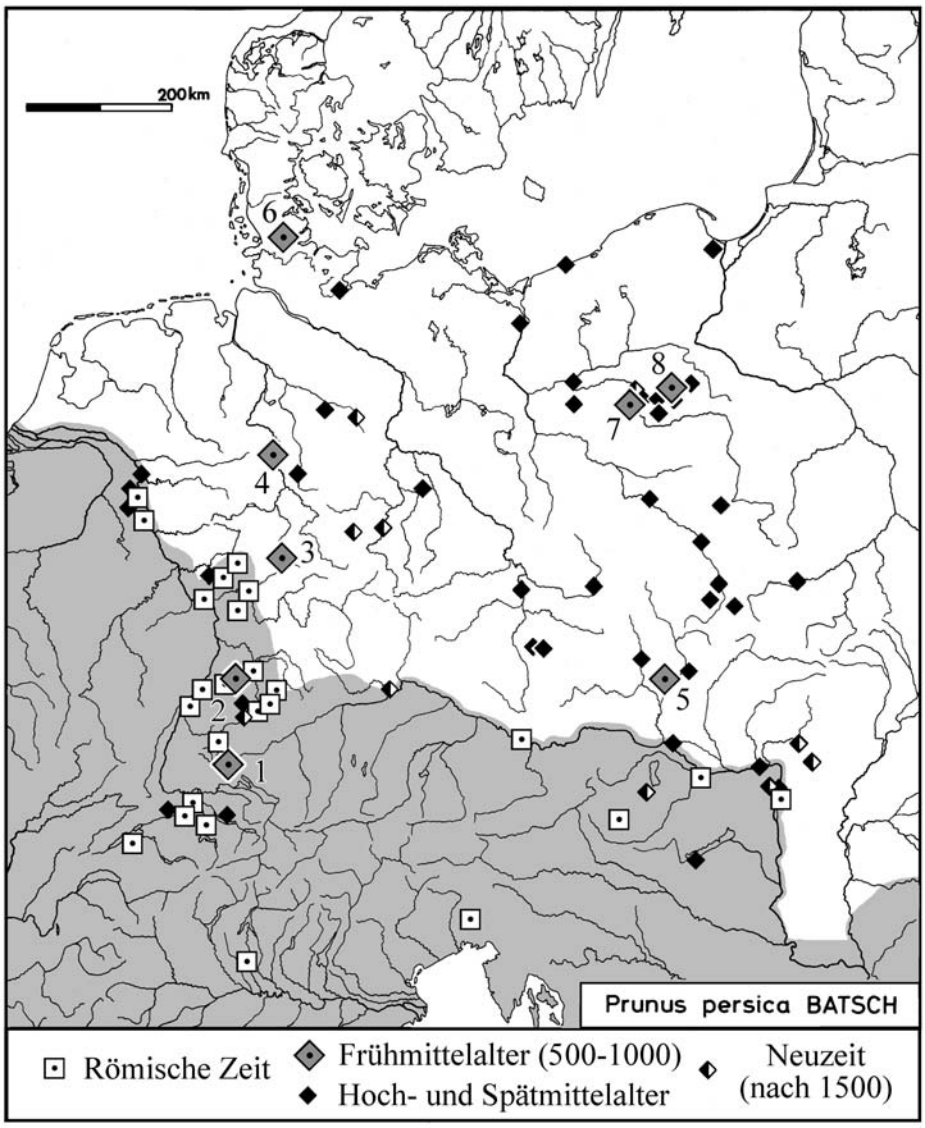
35 Zu Lorsch: Sanke/Wedepohl/Kronz 2003, 49-72 Tab. 1-7, Abb. 8; Sanke 2004, 193-202, Abb. 28.

36 Steppuhn 1998, 106-110 Tab. 7, Abb. 28, Liste 1; Wedepohl 2003a, 84-88; Kind/Wedepohl/Kronz 2004, 86-87.



1. Augsburg, Bayerisch-Schwaben, Bayern; 2. Brunhausen bei Gandersheim, Lkr. Northeim, Niedersachsen; 3. Corvey; Gem. Höxter, Kr. Höxter, Nordrhein-Westfalen; 4. Fulda, Kr. Fulda, Hessen; 5. Haithabu, Gem. Schleswig, Kr. Schleswig, Schleswig-Holstein; 6. Lorsch, Kr. Bergstraße, Hessen; 7. Paderborn, Kr. Paderborn, Ostfalen-Lippe, Nordrhein-Westfalen; 8. Rostock, Hansestadt Rostock, Mecklenburg-Vorpommern; 9. Mikulčice, Kr. Hodonín, Tschechien; 10. Staré Město, Kr. Uherské Hradiště, Tschechien; 11. Bratislava. Devínska Kobyla, Kr. Bratislava, Slowakei; 12. Nitra, Kr. Nitra, Slowakei; 13. Zalavár-Vársziget, Kom. Zala, Ungarn; 14. Pliska (ehem. Aboba), Kr. Šumen, Bulgarien; 15. San Vincenzo al Volturno, Prov. Isernia, Molise, Italien; 16. Torcello, Prov. Venezia, Italien; 17. Müstair, Kt. Graubünden, Schweiz; 18. Blois, Dép. Loir-et-Cher, Frankreich; 19. Rouen, Dép. Seine-Maritime, Haute-Normandie, Frankreich; 20. Huy, Prov. Lüttich/Liège, Wallonien, Belgien; 21. Dorestad, Wijk by Duurstede, Prov. Utrecht, Niederlande; 22. Hamwic, Southampton, Hampshire, England, Großbritannien; 23. Jarrow, Newcastle upon Tyne, Tyne & Wear, England, Großbritannien; 24. Wearmouth, Sunderland, Tyne & Wear, England, Großbritannien; 25. Ribe, Amt Ribe, Jütland, Dänemark; 26. Kaupang, Sandefjord, Vestfold, Norwegen; 27. Helgö, Ekero, Uppland, Schweden; 28. Paviken, Västergarn, Gotland, Schweden; 29. Åhus, Gem. Kristianstad, Schonen, Schweden

Abb. 13. Verbreitung der Glasverarbeitung in der Karolingerzeit



Die frühmittelalterlichen Nachweise in chronologischer Reihenfolge: 1. Oberflacht „Kreuzbühl“, Gem. Seitingen-Oberflacht, Kr. Tuttlingen, Baden-Württemberg; 2. Knittlingen „Ob Oberhofen“, Kraichgau, Baden-Württemberg; 3. Fulda, Kr. Fulda, Hessen; 4. Corvey, Gem. Höxter, Kr. Höxter, Nordrhein-Westfalen; 5. Mikulčice, Kr. Hodonín, Tschechien; 6. Haithabu, Gem. Schleswig, Kr. Schleswig-Flensburg, Schleswig-Holstein; 7. Poznań (ehem. Posen), Woj. wielkopolskie, Polen; 8. Gniezno (ehem. Gnesen), Woj wielkopolskie, Polen

Abb. 14. Die Verbreitung der archäologischen Nachweise für Pfirsich in der Römischen Kaiserzeit, dem Mittelalter und der Neuzeit

jedoch nicht näher bestimmt werden. Während die Fenstergläser eher an eine Bauwerkstatt für die Kirche, aber auch für repräsentative Bauten wie Abts- und Gästehaus denken lassen, erscheint bei den chemisch nicht unterscheidbaren Gefäßen auch eine dauerhafte Produktion vorstellbar. Die Verwendung von Glasgefäßen an der Mönchstafel in Fulda ist indirekt für die Zeit um 820 bezeugt[37] und legt eher eine halbwegs kontinuierliche Versorgung mit diesen Gläsern nahe. Es gibt allerdings mehrfach eine Korrelation zwischen den archäologischen Nachweisen von Glaswerkstätten und den Daten von großen Baumaßnahmen.[38] Die beiden gefundenen Formen von Schlacke konnten nur allgemein mit der Eisenverarbeitung verbunden werden.

3.7. Botanische Analysen

Eine der wichtigsten Verdienste Vonderaus ist zweifellos die Anregung zu Analysen der botanischen Makroreste aus den Kulturschichten. Gefunden wurden neben den üblichen Nutzpflanzen und Kräutern[39] Weinkerne (4 Stück), Pfirsich (ca. 25 Steine), ein Pflaumenstein, zwei Süßkirschsteine, Mandel (unsicher) und eine große Zahl von Haselnussschalen.

Die Bestimmungen sind heute leider nicht mehr überprüfbar, jedoch wahrscheinlich vertrauenswürdig.[40] Haselnüsse werden häufig in archäologischen Komplexen Europas angetroffen, sie könnten in Fulda außer zum direkten Verzehr auch der Ölgewinnung für die Küche oder als Brennstoff für Lampen gedient haben. Wein ist eine Kulturpflanze, die vor allem mit den Römern und der Ausbreitung des Christentums nördlich der Alpen weite Verbreitung fand. Die Obstarten stammen letztendlich alle aus Asien und wurden in Mitteleuropa ebenfalls im Gefolge der römischen Expansion bekannt. Arten wie Pfirsich und Mandel waren allerdings auch in römischer Zeit selten (Abb. 14).

37 Vita Aeigilis metr. cap. XVIII, 13-16, p. 112: *Dona ferunt Cereris multo sudore canistris/ Quaesita, est alii vario nidore respersis/Instant ferre dapes, alii namque inclita vitro/Ordine composito miscebant pocula Bacchi*.

38 Wedepohl 2003, 123-125, 132-134 Abb. 3; Wedepohl 2003a, 85-88; Sanke 2004, 202.

39 Ganz entsprechend den Ergebnissen aus dem Kloster Corvey: Stephan 2000, 335; Schlütz 1997, 66-67, 69.

40 Die Analysen machte Ludwig Wittmack (1839-1929), der 1898-99 über umfangreiche Kenntnisse und Erfahrungen bei derartigen Bestimmungen verfügte. Er war maßgeblich an der Gründung des Kgl.-preußischen Agrarmuseums in Berlin beteiligt und wurde 1871 erster Kustos, außerdem 1881 Professor für Botanik an der Kgl.-preußischen Landwirtschaftsschule. Er verfaßte eine große Zahl von botanischen Fachpublikationen, besonders zu Kulturpflanzen. Siehe: http://www.agrar.hu-berlin.de/fakultaet/history/Personen.htm#w. Diejenigen Bestimmungen, die überprüft wurden, konnten akzeptiert werden: Baas 1971, 76, 78, 80.

Die Übernahme derartiger Obstarten wurde den Germanen meist nicht zugetraut und ließ sich bisher auch nicht archäologisch nachweisen.[41] Lange Zeit wurde in der Forschung daher von einem Abbruch der Gartenkultur in Mitteleuropa mit dem Ende des römischen Reichs ausgegangen und eine zweite Welle der Romanisierung im Zusammenhang mit der karolingischen Renaissance aus den erstmaligen Wiedernennungen in dem *Capitulare de villis* (Kap. 70), den *Brevium exampla* und auf dem St. Galler Klosterplan, Schriftquellen aus der Spanne 792/3-830, erschlossen.[42] Mehrfach ging man wegen dieser Pflanzenarten sogar davon aus, dass der normative Anspruch dieser Quellen nicht für das gesamte Karolingerreich galt, eine heute widerlegte Einschätzung.[43] Die Schwierigkeit bei der Beurteilung der Schriftquellen besteht in der ansonsten sehr seltenen Nennung einzelner Arten. Die Schenkungen wie z.B. an Fulda oder Lorsch enthalten zwar wiederholt Obstgärten, verraten aber ebenso wie der Rechtschutz für Gärten in den germanischen Volksrechten nichts über deren Bestand.

Unterstützt von den bislang nur vereinzelt duchgeführten botanischen Analysen archäologischer Komplexe wird heute mehrheitlich von einer Kontinuität des Gartenbaus zumindest in den ehemals römischen Gebieten an Rhein und Donau ausgegangen,[44] auch wenn die Zahl frühmittelalterlicher Nachweise beispielsweise für Pfirsich immer noch recht gering ist (Abb. 14). Den Nachweis eines Pfirsichsteins in Grab 28 in Oberflacht als Evidenz für die Teilnahme der zugehörigen ländlichen Siedlung am Fernhandel zu werten,[45] geht jedenfalls trotz der aus der Durchlochung des Steins abzuleitenden Trageweise als Amulett zu weit. Diesem merowingerzeitlichen Beleg kann inzwischen jedenfalls ein Beleg mit 23 Pfirsichsteinen aus dem spät- oder endmerowingerzeitlichen Grab 51 von Knittlingen „Ob Oberhofen“ (Kraichgau) an die Seite gestellt werden.[46]

Die Lückenhaftigkeit der archäobotanischen Quellenerschliessung und damit die Problematik von Aussagen zur Gartenkultur wird auch daran erkennbar, dass im ehemals römischen Gebiet auf diese beiden Belege erst wieder einige wenige Nachweise aus dem Hoch- und Spätmittelalter folgen, ohne dass für diese Zeiten irgendjemand ernsthaft an der Existenz eines Obstanbaus zweifelt. Deutlich ist anhand der archäobotanischen Ergebnisse jedoch die allmähliche Ausbreitung der Obstkulturen wie des Pfirsich über ehemals römisches Gebiet hinaus nach Norden und Osten in der

41 Willerding 1984, 49-53, Abb. 2,2.3; ders. 2003, 39; Teichner 2000, 87; Baas 1987, 108-111.

42 Metz 1954, 397, 400, 406-409; Verhein 1955, 366-370. 368 mit Karte; Sörrensen 1962, 243-244, 250-251; Willerding 2003, 162, 258-261.

43 Härtel 1999, 93-95, 93 mit Karte.

44 Rösch 1999, 62-67.

45 Zauner 1992, 131, 140; Quast 2000, 279, 283-284, 286 Abb. 1,1. Das Grab ist in die Spanne letztes Drittel 6. bis Mitte 7. Jahrhundert zu datieren. Möglicherweise vom gleichen Gräberfeld stammen Fragmente von drei weiteren Pfirsichsteinen, darunter ein bearbeiteter, die den Gräbern 78-81 zugeordnet werden.

46 Damminger 2002, 126-127, 131, 230.

Karolingerzeit. Zeitgleich zu dem karolingerzeitlichen Fund aus Fulda sind lediglich diejenigen aus Corvey und Mikulčice, während die Funde aus Haithabu und Großpolen etwa ein Jahrhundert jünger sind (Abb. 14).[47] Das Verbreitungsbild für Pflaume und Süßkirsche ist weniger aussagefähig, während der unsichere Nachweis für Mandel, wenn er akzeptiert wird, der archäologische Erstbeleg für das frühmittelalterliche Europa wäre.[48] Insgesamt darf also wohl von der Kultur der genannten Obstarten in Fulda ausgegangen werden. Die klimatischen Bedingungen sind nicht problematischer als in Nordfrankreich, wo die Brevium exempla für Treola (Triel-sur-Seine, Dép. Yvelines) und Asnapium (Annapes, Dép. Nord) z.B. Pfirsichbäume bezeugen. Ein Import ausschließlich für den Konsum ist zwar theoretisch denkbar, wird jedoch von den meisten Paläobotanikern prinzipiell ausgeschlossen.[49] Ein Brief des Abts Lupus von Ferrières zeigt, das eine solche scharfe Trennung ohnehin nicht sinnvoll ist.[50] Die Fuldaer Nachweise erlauben daher einen bemerkenswerten Einblick in die klösterliche Gartenkultur, ebenso wie die neuen Funde aus dem benachbarten Kloster Corvey.[51]

3.8. Zeitstellung und Interpretation des Fundkomplexes

Wie bereits betont wurde, lassen sich entgegen der Ansicht Vonderaus und Hahns keine Funde des Komplexes Langebrückenstraße benennen, die überzeugend und ausschließlich in das 6. oder 7. Jahrhundert zu datieren wären. Dagegen sind viele Nachweise zu finden, die in die Karolingerzeit verweisen (Abb. 15). Dabei ist vor allem die Dendrochronologie entscheidend. Somit ist entgegen der Interpretation Vonderaus von einer Gleichzeitigkeit dieser Funde mit dem frühen Kloster auszugehen. Die Entstehung der Kulturschicht kann ohne Probleme mit der Müllentsorgung des Klosters hangabwärts erklärt werden. Die Pfähle hingegen können damit nicht verbunden werden. Da eine Interpretation als Pfahlbauten ausscheidet, muss diese Struktur, die die Kulturschicht stört und damit jünger ist, einen anderen Zweck gehabt haben. Wahrscheinlich gehören die Sandanschüttungen, die Pfähle und deren Verklammerungen sowie die Steinpflas-

47 Willerding 1984, 49-53; ders. 2000, 594-597 Abb. 1; Stephan 2000, 351, 468-469. Die chronologische Einordnung des Fundes aus der Weser bei Corvey in die Zeit vor der Klostergründung (822) nur aufgrund einiger unverzierter Keramik und verstürztem Bauschutt erscheint doch etwas ambitioniert und ist wohl leider nicht genauer als 9. Jahrhundert möglich.

48 Baas 1987, 109, 111; Willerding 1984, 57.

49 Willerding 2000, 599; Rösch 1999, 66.

50 Epistolae Lupi 96 Nr. 111 an Odo von Corbie: "*Persica, quae pollicitus sum, per cursorem, quem iam bene cognoscitis, misi. Ea si, ut vereor, voraverit vel vi sibi erepta questus fuerit, extorquete precibus, ut vel ossa tradat, nisi tamen et ipsa consumpserit, ut iucundissimorum persicorum sitis quandoque participes.*"

51 Stephan 2000, 335; Willerding 2000, 594-599, 619 Tab. 1-2.

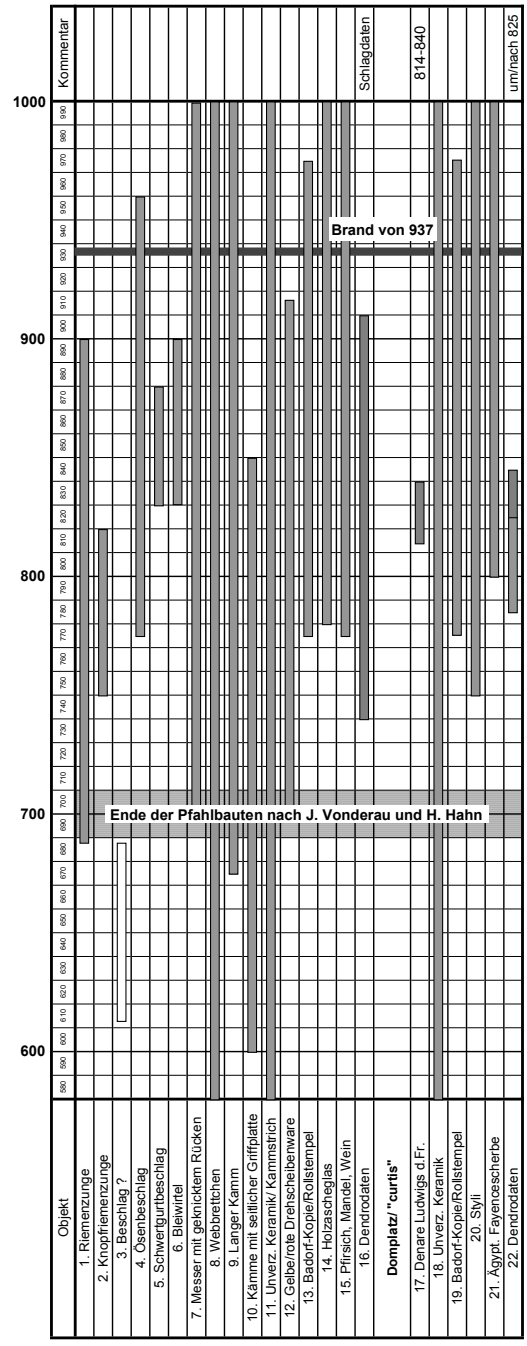


Abb. 15. Geamtübersicht über alle Datierungsspannen

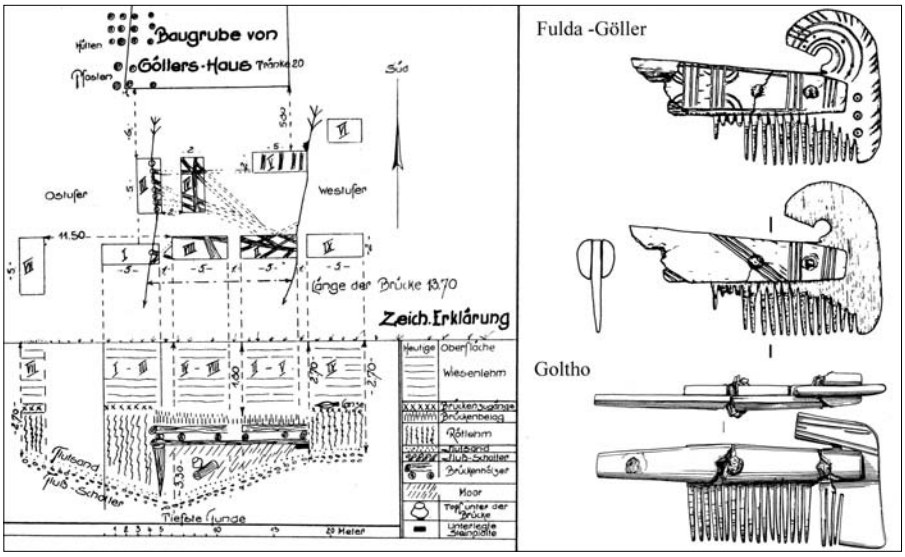


Abb. 16. Archäologischer Befund und frühmittelalterlicher Kamm vom Fundplatz Göller („An der Tränke“ 20) im Vergleich mit einem Kamm aus Goltho

terung zu einer einheitlichen Konstruktion, deren Zweck die Erzeugung einer trocknen und festen Oberfläche war, auf der aber keine Bauten standen.

Eine ähnliche Konstruktion aus mehreren Pfahlreihen konnte an der rund 330 m entfernten Fundstelle „An der Tränke“ 20 (Abb. 16) durch Vonderau beobachtet werden, der diese Struktur als vorgeschichtliche Brücke von der Römischen Kaiserzeit bis zum Bau der steinernen Brücke 882 interpretierte.[52] Hier waren anstelle der Steinpackung jedoch mehrere Lagen Hölzer und Rinden eingebracht worden. Ein Kamm aus jenem Befund sichert entgegen Vonderau die frühmittelalterliche Datierung dieses Befundes, der unmöglich eine viele Jahrhunderte andauernde Belastung als Brücke überstanden hätte. Ein Zusammenhang mit der Langebrückenstraße wird auch durch dieselbe Höhe über dem Flusstal wahrscheinlich. Diese Konstruktionen müssen nach den jüngsten Dendrodaten aus der Langebrückenstraße nach 876 angelegt worden sein. Unter den bekannten Bauereignissen kommen zwei als Erklärung in Frage, der Brückenbau von 882 und die Wiederherstellung der Befestigung 915/6. Dabei ist ersteres wahrscheinlicher, zumal die in der *Gesta abbatum* genannte Brückenlänge von 120 Ruten die heutige Brücke deutlich übertrifft und entweder eine verderbte Textangabe ist oder die zur Brücke führenden Straßen mit einschließt. Die Pfahlkonstruktionen hätten in dieser Interpretation also den Zweck gehabt, feuchte weiche Stellen zu befestigen. Die Brandschicht, die die ganze Struktur abschließt (Abb. 2,C), könnte mit dem Feuer

52 Vonderau 1931, 54-55 Abb. 19.

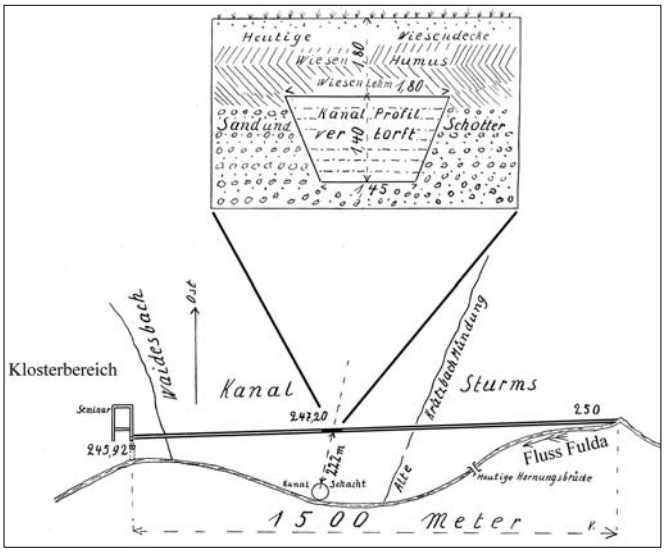


Abb. 17. Der Verlauf des Sturmi-Kanals nach J. Vonderau

von 937 verbunden werden. Weder die jüngste, auf der Fundstelle geborgenen Keramik (Abb. 12), noch andere Fundstücke stehen einer solchen Deutung der Brandschicht entgegen.

4. Handwerke im Kloster

Aus den beschriebenen Veränderungen in der Chronologie gegenüber dem Ansatz Vonderaus ergeben sich eine Reihe weiterer Schlussfolgerungen. Einerseits sind die erwähnten Handwerksaktivitäten auf das Kloster oder seine unmittelbare Umgebung in den ersten 150 Jahren der Existenz des Klosters zu beziehen. Es sind Glas- und Eisenverarbeitung, die Herstellung von Kämmen aus Geweih, von Perlen, von Leder und/oder Pergament sowie von Textilien nachweisbar. Quantitativ dominieren die Funde der Glasverarbeitung und der Kammproduktion, ein Bild, das dem der Klöster Lorsch und San Vincenzo al Volturno, aber auch dem des Emporium Torcello bei Venedig entspricht.[53] Ob das mit der qualitativen Bedeutung für die Klosterökonomie korrespondiert, kann nicht entschieden werden. Im Unterschied zu den genannten Beispielen dominieren in Corvey quantitativ die Nachweise für Buntmetallverarbeitung neben denen für Glasverarbeitung.[54]

53 Sanke 2004, 197-201, 217-218, 234, Abb. 28, Abb. 38; Mitchell 1996, 143-155 Abb. 21, Abb. 29, Abb. 32; Hodges/Gibson/Mitchell 1997, 272-278, Abb. 25-27, 29.

54 Stephan 1994, 207-209, 211, 212, 214 Abb. 1, Abb. 6-8; Stephan 2000, 347, 349, 352, 791 Abb. 191, Karte 4.

Die Lokalisierung der Werkstätten in Fulda ist nicht möglich, eine enge Nähe zur Kirche und Nebengebäuden wie auf dem St. Galler Klosterplan ist aber sehr wohl vorstellbar.[55] Kapitel 66 der Benediktinerregel verlangt weitgehende Autonomie des Klosters auch durch eigene *artes diversae*. Diese Regel zitiert die Vita Sturmi bei der Beschreibung des Kanalbaus. Die Einhaltung dieser Regel sichern andere Schriftquellen, die die Produktion von Waffen und Ausrüstung, Schmuck und Kleidung in Kloster Fulda zur Zeit der Äbte Ratgar und Hraban beweisen.

Frühmittelalterliche Klöster besaßen insofern einen frühstädtischen Charakter, dass sie im Rahmen des *servitium regis* auch eigene Truppenkontingente auszurüsten hatten.[56] Der Regelkommentar des Hildemar von Corbie (um 850), die Statuten des Abtes Adalhard von Corbie (von 822) und der St. Galler Klosterplan bestätigen diese umfangreiche Handwerksproduktion, sie verweisen auch ausdrücklich auf Mühlen und Gärten.[57]

Leider werden die *artes diversae* durch die Vita Sturmi nicht spezifiziert. Zu diesem Nutzen des Kanals zählte wahrscheinlich neben dem Antrieb der Mühle(n) die Wasserversorgung für die Küchen und die Brauerei, die Wäschereien und Baderäume sowie die Reinigung von den Latrinen.[58] Die Lokalisierung des Fuldaer Kanals ist jedoch bisher nicht eindeutig gelungen. Ein älterer Vorschlag des Geographen J. F. Nick von 1865 vermutete die Anzapfung der Fulda beim heutigen Kohlhaus, was bis zum Kloster eine Länge von etwa 3400 m bedeuten würde. Vonderau rekonstruierte hingegen anhand zweier kurzer Aufschlüsse einen Kanal von 1500 m Länge (Abb. 17). Da er jedoch keine datierenden Funde gewinnen konnte, bleibt auch dieser Vorschlag unsicher. Ebenso unklar ist das Verhältnis des Waidesbaches, der das Kloster durchfloss, zum Kanal. Ein Aquädukt nach römischen Vorbild, wie von Hahn vorgeschlagen, ist wohl aufgrund des vollständigen Fehlens von Hinweisen auf derartige Bauten aus dem Frühmittelalter auszuschließen. Wahrscheinlich nahm der Kanal einfach weiteres Wasser auf.[59] Im Bereich der Domdechanei wurde eine west-ost-verlaufende Wasserleitung

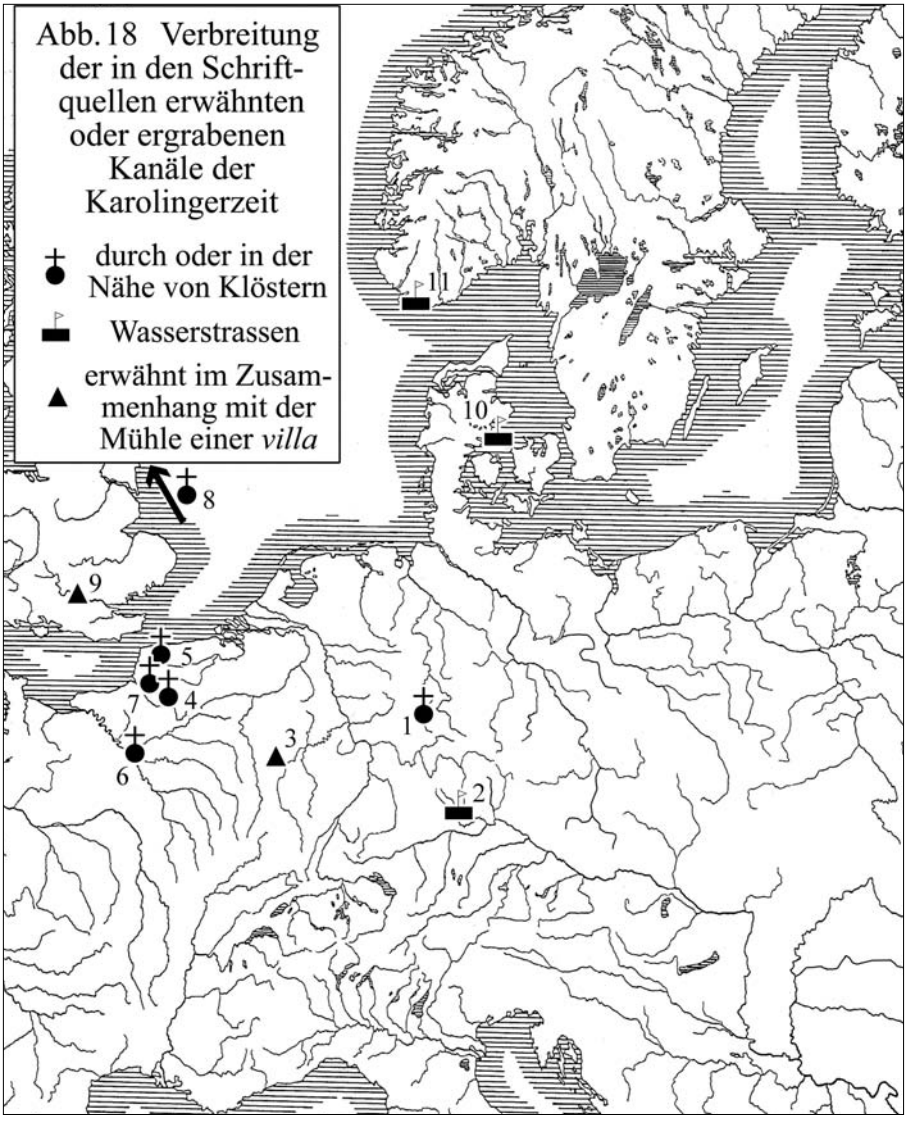
55 Stephan 1994, 207-214 Abb. 1; Stephan 2000 Karte 5; Hodges/Gibson/Mitchell 1997, 272-278 Abb. 25-29.

56 Hussong 1986, 283; Schwind 1984, 102-103, 113-115; Hägermann 1991, 432, 435; Hodges/Gibson/Mitchell 1997, 233, 237, 280, 282 Abb. 3.

57 Braunfels 1969, 59, 278, 286; Kasten 1986, 110-137; Schwind 1984, 108, 112-122; Capelle 1999; Stephan 2000, 128-130.

58 Richter 1900, 42-43, 54-55; Stephan 2000, 197-200; Braunfels 1969, 305-307.

59 Richter 1900, 39-42, 40 Anm. 2, 42 Anm. 1; Vonderau 1944, 33-35 Abb. 24-25; Hägermann 1991, 375-377; Elmshäuser 1992, 11-13, 23-24 Anm. 97-107, 109, 111 und 115. Der Kanal wäre 1,40 m tief, 1,80 m breit und hätte ein Volumen von 3400 m³ sowie rund 5 m Gefälle. Der Flußverlauf, den Vonderau 1944, 33-35 Abb. 24-25 rekonstruierte, kann allerdings nicht akzeptiert werden, da er noch von einem Flussarm unter der sog. Brücke auf dem Grundstück Göller ausging, vgl. Kind 2003, 217, 220-225.



1. Fulda, Kr. Fulda, Hessen; 2. fossa Carolina, Gde. Graben, Lkr. Weißenburg-Gunzenhausen, Mittelfranken, Bayern; 3. villa Stain, Gde. Etain bei Verdun, Dép. Meuse, Lothringen/ Lorraine, Frankreich; 4. Corbie, Dép. Somme, Picardie, Frankreich; 5. Sithiu/ St. Bertin, Dép. Nord, Nord-Pas-de-Calais, Frankreich; 6. St.Denis, Dép. Seine-Saint-Denis, Paris, Frankreich; 7. St. Riquier, Dép. Somme, Picardie, Frankreich; 8. Hexham, Tynedale, Northumberland, Großbritannien; 9. Old Windsor, Berkshire, England, Großbritannien; 10. Kanhave – Kanal, Samsø, Amt Århus, Dänemark; 11. Groben bei Spangereid, Vest-Agder, Norwegen

Abb. 18. Verbreitung der in den Schriftquellen erwähnten oder ergrabenen Kanäle der Karolingerzeit

in Holzfassung neben einem Steingebäude gefunden, wahrscheinlich eine Ableitung des Hauptkanals.[60]

Solche klösterlichen Kanäle der Karolingerzeit sind aus den Schriftquellen in einiger Zahl bekannt (Abb. 18). Im Unterschied zu den antiken Aquädukten und auch den Wasserleitungen merowingerzeitlicher Baptisterien und Paläste dienten sie nicht primär der Trink- oder Brauchwasserversorgung, sondern eher der Nutzung der Wasserenergie. Terminologisch erscheinen sie als *fossa*, seltener auch als *aquaeductus* (letzteres besonders in Italien, aber auch in den Fuldaer Gesta abbatum), mehrfach mit dem Zusatz *in usum molendinorum*. Mehrere Kilometer Länge sind nicht ungewöhnlich. Es dürften offene Kanäle gewesen sein, wie auch die wenigen beschreibenden Angaben und die Konstruktionen der zeitgleichen Wasserwege nahelegen.[61] Insgesamt bekräftigen die Ergebnisse aus der Langebrückenstraße viele der aus den Schriftquellen gezogenen Schlussfolgerungen zu den Wirtschaftsstrukturen eines karolingerzeitlichen Klosters.

Es ist zu betonen, dass damit aus Fulda die ersten archäologischen Belege für eine Wassermühle und ein Weiterexistieren der antiken Gartenkultur im Umfeld eines karolingerzeitlichen Klosters überhaupt vorliegen. Es wurde mit Fulda ein Kloster fränkischen Modells in der Wildnis geschaffen und entsprechend den Vorbildern aus Neustrien und Italien ausgestattet. Im archäologischen Befund zeigt sich dieses in der Kombination fremder, hierher verbrachter Techniken aus antiker Wurzel (Steinbauweise, Wassermühle, Glasverarbeitung zu Fensterscheiben, Verwendung des Zirkels, Gartenkultur) und deren Weiterentwicklungen (z.B. Holzascheglas), mit neuen Strukturmerkmalen (die klösterliche Stadt). Diese Kombination von Elementen aus antiker Wurzel mit neu entwickelten sollte besser als andere Interpretationen den Begriffsinhalt der sogenannten karolingischen Renaissance bilden. Auch in der Alltagskultur ließen sich Elemente aus dem romanischen Westen bzw. Süden benennen, so die Kämme mit seitlicher Griffplatte.

5. Schlussfolgerungen zur Siedlungsentwicklung Fuldas

Abschließend sollen noch einige Bemerkungen zur Topographie des karolingerzeitlichen Klosters Fulda folgen. Fixpunkte sind dabei der bekannte Standpunkt der Basilika und die partiell erhaltene Michaelskirche. Zieht man weitere Grabungen Vonderaus und Hahns sowie Nennungen in Schriftquellen heran, so ergibt sich eine recht gute

60 Ludowici 1991, 31 Abb. 1, Abb. 3 A-B; Müller 1995, 87-88 Anm. 61; Krause 2002, 39, 165, 262-265 Nr. DD/3/176.182.196.230.237. Die Leitung datiert dendrochronologisch um/nach 845, ältere Hölzer wurden sekundär verbaut. Aus derselben Schicht stammt ein Denar Ludwigs des Frommen (814-840).

61 Hägermann 1991, 373-379; Elmshäuser 1992, 2-15; Lohrmann 1992, 182; Horn 1975, 233; Stephan 2000, 197-200.

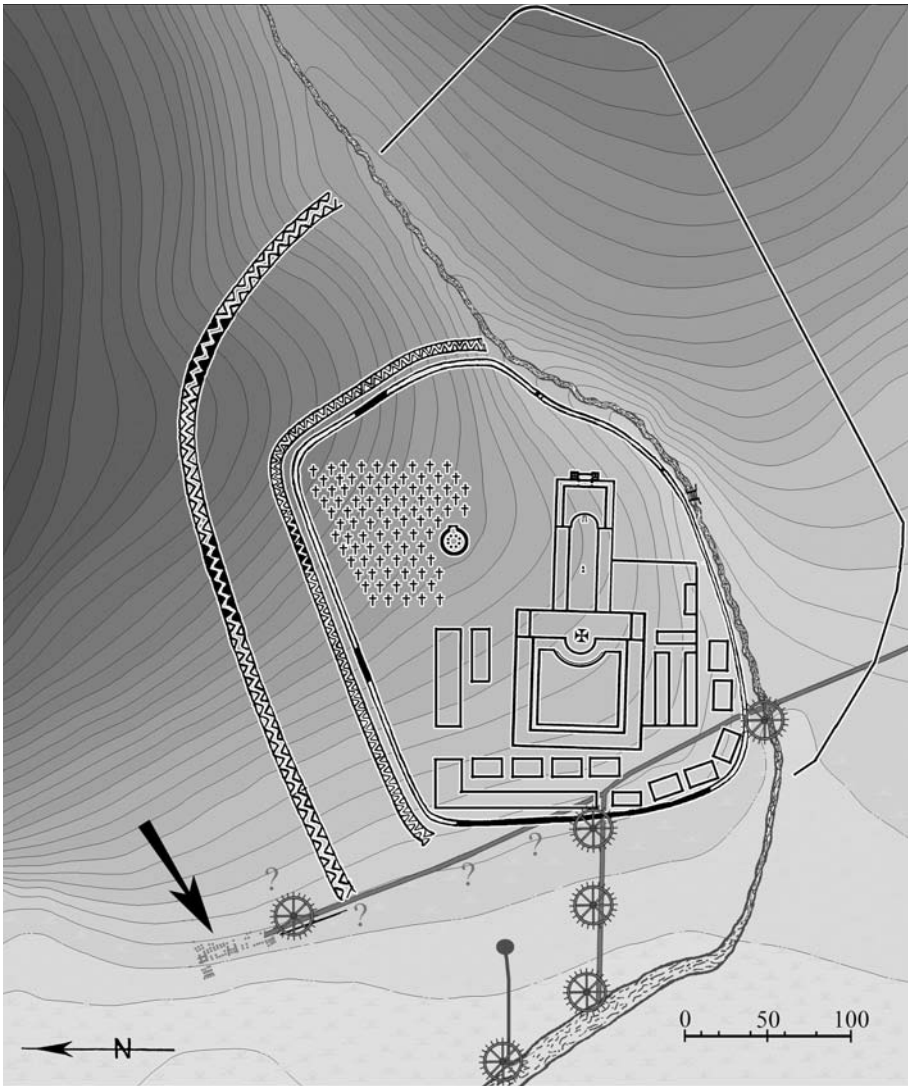


Abb. 19. Rekonstruktion des frühmittelalterlichen Klosters Fulda um 830 mit Markierung der Fundstätte „Pfahlbauten“

Vorstellung von dem Großkloster des 9. Jahrhunderts (Abb. 19). Wie auch bei anderen Klöstern dieser Zeit zu sehen, sind die vom St. Galler Klosterplan bekannten Strukturelemente in Anpassung an die konkrete topographische Situation angelegt worden. Eine Planierschicht, die mehrfach im Umfeld des Doms angetroffen wurde, kann leicht mit dem Bau der großen Ratgar-Basilika 791-830 verknüpft werden, archäologisch gestützt durch mehrere Denare Ludwigs des Frommen (814-840) aus dieser Schicht (Abb. 15).

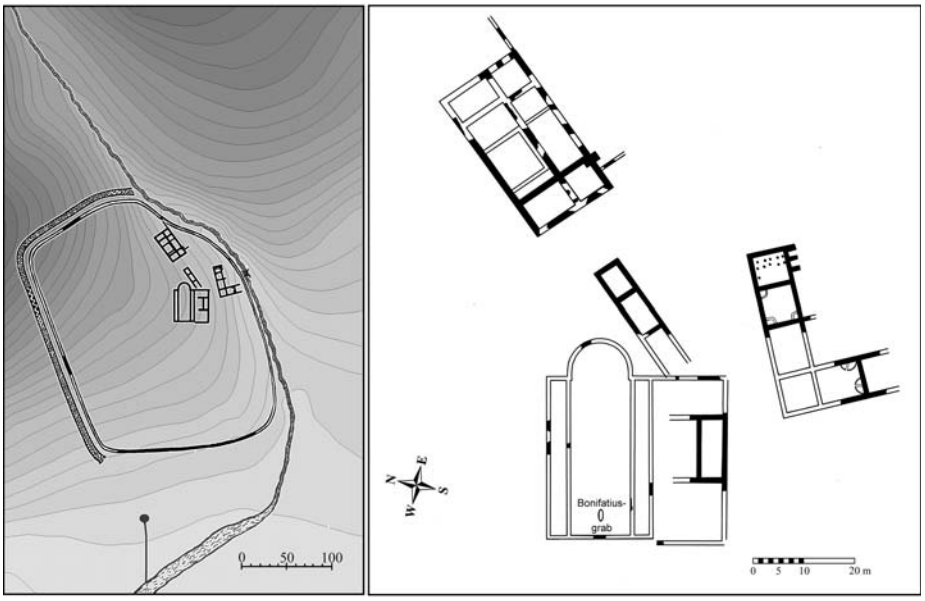


Abb. 20. Rekonstruktion des frühmittelalterlichen Klosters Fulda in der Zeit des Abts Sturmi

Unter dieser Schicht fanden sich ein großer Bau mit Halle, ein L-förmiges Haus mit annähernd quadratischen Räumen (Winkelbau) und einen Dreizellenbau mit ähnlicher Innengliederung. Mehrere Räume dieser Zellenbauten besaßen Estriche, zwei Räume des Winkelbaus und einer im Zellenbau außerdem Reste von Kanälen mit Feuerspuren (Abb. 20).

Es verbleibt die Frage nach der Interpretation dieser Strukturen unter der Ratgar-Bauschicht. Vonderau und besonders Hahn verbanden diese Reste mit einer vorklösterzeitlichen Nutzungsphase und bezeichneten sie als merowingerzeitliche *curtis*. Es wurde über eine Verbindung dieser *curtis* mit der Familie der *Hedene* spekuliert, Bezüge der Bauten zu römischen *villae* gesehen und Quellen der Kenntnis des Bonifatius über diesen Platz, in dessen Ruinen die ersten Mönche kampiert haben sollten, gesucht. Grundlage hierfür wie auch für die Datierung der angeblichen Brandzerstörung um 700 durch einen sächsischen Einfall war ausdrücklich eine identische Keramik, wie sie auch in der Langebrückenstraße gefunden wurde.[62]

62 Vonderau 1946, 7-15, 18-22, 28 Abb. 13 Plan I-II; Hahn 1954, 41, 45-46; Hahn 1984, 300-304, 301 Abb. ohne Nummer. Diese Interpretation wurde bei praktisch allen folgenden historischen Arbeiten zu Fulda akzeptiert, so z.B. Hussong 1985, 26, 27-29; Krause 2002, 11 Anm. 3, 165. Nur Lübeck 1949, 108; Lobbedey 1986, 403 und Sippel 1993, 256 unterstreichen die Willkürlichkeit der Datierung. Die angeblich nachgewiesene Kirche der *curtis* wurde bereits von Lobbedey 1986, 402-404, 410-413 widerlegt.

Die nachgewiesene karolingerzeitliche Datierung der Keramik in der Langebrückenstraße stellt dieses Paradigma nun in Frage. Es gibt auch sonst, soweit dieses anhand der wenigen erhaltenen Materialien noch überprüfbar ist, keine merowingerzeitlichen Funde aus der *curtis* und keinen eindeutigen stratigraphischen Beweis für eine vorklösterliche Datierung der Bauten.[63] Das Konzept der *curtis* im Sinne eines Königs- oder Adelshofs in einer befestigten Etappenstation der fränkischen Militärmacht entlang der historischen Fernstrassen, das besonders Hahn bei seiner Intrepretation als bewiesen voraussetzte, muss inzwischen als widerlegt angesehen werden,[64] so dass zumindest seine Deutungen des funktionalen Zusammenhangs der Bauten als gegenstandslos anzusehen sind.

Da eine derartige Struktur in der *Germania libera* der Kaiserzeit kaum vorstellbar ist, erscheint es wahrscheinlich, diese Bauten auf die erste Klosterphase zwischen der Gründung 744 und den Umbauten 791-830 zu beziehen. In diesem Fall wäre das Kloster tatsächlich in einer seit römischer Zeit verlassenen Wildnis gegründet worden. Trifft diese Interpretation zu, so müßten die sogenannten *curtis*-Strukturen mit denen eines Klosters in Übereinstimmung zu bringen sein. Die Ausrichtung der genannten Bauten scheint nicht zu einer Kirche, für die ja eine strenge Orientierung zu erwarten wäre, zu passen. Jedoch muss für die Nebenbauten mit einer Anpassung an die topographische Situation, hier speziell den Lauf des Waidesbachs, gerechnet werden.

Inzwischen konnte ausserdem nachgewiesen werden, dass der heutige Verlauf des Baches nicht mit Vonderau und Hahn ins Frühmittelalter zurückprojeziert werden darf. Der Waides muss im Bereich der *curtis*-Bauten deutlich weiter südlich verlaufen sein, also war der Abstand der Bauten zum Bach größer. Damit wird auch der Verlauf der Befestigung entsprechend der vorliegenden Rekonstruktion sehr in Frage gestellt. Sollte die zur Zeit des Sturmi errichtete Kirche tatsächlich schmaler gewesen sein als der Ratgar-Bau, würden auch die Überschneidungen (der Rekonstruktionen!) entfallen.[65]

Die Mauertechnik der *curtis*-Bauten stimmt mit denen der ersten Kirche überein und unterscheidet sich von derjenigen der jüngeren Kirchenphasen, wodurch die Möglich-

63 So auch Sippel 1993, 256 und Vorlauf 2004, 8-11.

64 Zur Forschungsgeschichte der versuchten Gleichsetzung von Königshöfen (*curtes*) mit archäologisch nachweisbaren Befestigungen, die besonders in Hessen durch W. Görich viele Blüten trieb, siehe z. B. Gauert 1984, 105-111.

65 Krause 2002, 11, 39, 161-163, 168, 171, 173, 194-196, 207-209, 224-227 Nr. V/2/3-7, V/4, H/2/40-49 vermutete eine Kirche mit einem Hauptschiff von etwa 11 m Breite. Zur Anpassung an die Topographie siehe: Stephan 2000, 134-135; Jacobsen 1992, 145-146; Vorlauf 2004, 11. Der Waidesbach wurde während der barocken Umgestaltung zwischen 1715 und 1740 in einen Tunnel verlegt. Vorlauf 2004, 12-30 Abb. 1, Abb. 9-10 konnte durch eine Nachgrabung 1999 die Unrichtigkeit der bisherigen Rekonstruktionen des Bachverlaufs und auch noch der hier vorgelegten Abb. 20 zeigen. Für eine neue Rekonstruktion des gesamten frühmittelalterlichen Bachverlaufs fehlen jedoch noch weitere Aufschlüsse. Diese Nachgrabung 1999 erbrachte sonst keine Hinweise auf Datierung oder Struktur der sog. *curtis*.

keit einer Gleichzeitigkeit besteht. Auf die erstaunliche Ähnlichkeit der Zellenbauten mit einigen Nebengebäuden des St. Galler Klosterplans wurde bereits hingewiesen, der Datierungswert dieser Feststellung ist jedoch unklar.[66] Der Winkelbau könnte der Rest eines unvollständig (erhaltenen) Kreuzgangs sein, zumal in frühen Klöstern generell mit Holzbauten gerechnet werden muss und die Ausprägung regulärer Kreuzgänge im Klosterbau ohnehin erst um 800, mit der Durchsetzung einer vereinheitlichten Benediktinerregel, zu erwarten ist.[67]

Die schlecht erhaltenen Kanalspuren im Zellen- und im Winkelbau sind kaum interpretierbar, die Ähnlichkeit zu Befunden aus den West- und Ostflügeln des Kreuzgangs auf der Reichenau (9. Jahrhundert), im Südflügel des Kreuzgangs in Müstair (Graubünden, 9. Jahrhundert) sowie im Altarraum und dem Nebengebäude von St. Martin in Disentis (Graubünden, zeitgleich zu Fulda, 1.-2. Drittel des 8. Jahrunderts) macht dennoch die Deutung als Kanalheizungen wahrscheinlich, welche mit den römischen Hypokausten das kontinuierliche Funktionsprinzip gemeinsam haben. Dieses Prinzip wird am Ende der Karolingerzeit durch diskontinuierlich arbeitende Heißluftheizungen ersetzt, so dass derzeit die karolingerzeitlichen Grabungsbefunde die jüngsten Belege für die antike Heizungsform Kanalheizung darstellen. Der so beheizte Raum könnte als Wärmeraum oder als Bad gedient haben, wie dieses auf dem St. Galler Klosterplan und für einige Klöster beschrieben wird.[68] Die Brandreste, die Vonderau und Hahn zur Annahme einer Brandzerstörung der *curtis* verleiteten, könnten möglicherweise aus dem Heizungssystem stammen und beim Abriß dieser Bauten und der Einplanierung der Reste während der Ratgar-Bauarbeiten verteilt worden sein. Die theoretische Möglichkeit der solcherart beschriebenen Antikenrezeption war in der Fuldaer Bibliothek gegeben,[69] die praktische Bedeutung dieser ist Bücher jedoch unklar. Im Ergebnis lässt sich jedenfalls feststellen, dass diese ältesten frühmittelalterlichen Befunde zwanglos mit einem Kloster des 8. Jahrhunderts in Übereinstimmung gebracht werden können, der Gründungsperiode des Klosters Fulda in der Zeit des Sturmi.

66 Krause 2002, 154; Jacobsen 1992, 145-146, Abb. 64.

67 Scholz 1993, 66-67; Sennhauser 2004, 290-292; Legler 1996, 85-89; Zettler 1988, 102, 157-183; Jacobsen 1992, 193; Stephan 2000, 134-135.

68 Zettler 1988, 196-249, Abb. TA 39-41; Meyer 1989, 216-222 Abb. 4; Verhein 1955, 333-334, 355-356; Bingenheimer 1998, 44-64,228-231, 389-390, 393-394, 396-399, Kat.-Nr. II,7, VI,8, VI,11, Abb. 12, Abb. 14, Abb. 16-20, Abb. K9-10; Sennhauser 2003, 81-86, 726, 969-970, Kat.-Nr. A 31-32, Abb. 1-2, Abb. 21.

69 Es gab das Vocabularius Sti. Galli, die Architectura des Vitruv (um 782) und vermutlich auch die Vorlage für ein Cassiodor-Manuskript mit Zeichnungen der hydraulischen Bauten im Kloster Vivarium (um 900); Metz 1954, 410-411; Elmshäuser 1992, 7-8, 20 Anm. 73.

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New findings of the excavations in *Mosaburg*/Zalavár (Western Hungary)

Béla Miklós Szőke

The origin of the *comitatus* of Priwina and Kozel at *Mosaburg*/Zalavár

A new period began in the history of the Carpathian Basin at the close of the eighth century. Between 791 and 811, the Avar Khaganate, the most important power in East Central Europe,[1] came under the overlordship of the Carolingian Empire and its territory was divided into several smaller units.[2] Vassal principalities were established on the northern and southern fringes of the former Avar Khaganate, while the central region west of the Danube was directly incorporated into the Carolingian Empire.[3] The population of the former Khaganate in the areas east of the Danube, though politically neutral, probably came under the indirect rule of the Carolingian Empire.[4]

Pannonia, the eastern territory of the Empire, was divided into several *comitatus*, which acted as smaller administrative units. One such *comitatus* was created along the Upper Danube; another lay in the Savaria/Szombathely area.[5] Yet another *comitatus* with its seat at Mosaburg/Zalavár[6] was established at a relatively late date along the River Zala in Lower Pannonia by Priwina, the former *dux* of Nitra, and his son Kozel. The most important events in the life of the *comitatus* up to the year 870 are recorded in detail in the *Conversio Bagoariorum et Carantanorum*.[7] The information contained in this report and the findings of the excavations conducted over the past fifty years at the seat of the *comitatus* allow a fresh analysis and a new interpretation of the cultural connections of the population living here and a better understanding of certain buildings at Mosaburg/Zalavár.

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1 Deér 1965; Pohl 1988; Bóna 1988a.
2 Váczy 1972; Pohl 1988b.
3 Bóna 1985; Sós 1973; Wolfram 1987.
4 Szőke 1988; *idem* 1993.
5 Sós 1973 , 22-25; Wolfram 1987, 277-278.
6 Mosaburg has been identified with the settlement site at Zalavár-Vársziget [Castle Island], lying on a smaller elevation (an "island"), which rose above the one-time marshland surrounding it.
7 Kos 1936; Wolfram 1979; Wolfram 1996; Lošek 1997.

The cultural milieu of the population of *Mosaburg*/Zalavár

When Priwina settled in *Mosaburg* in the early 840s, he "gathered the peoples from all around him".[8] A part of this population can be identified with the Avar-Slavic groups living in this area since the seventh century, which had a distinct mixed culture known as the Pókaszepetk–Zalakomár group.[9] One distinctive feature of this group is its biritual mortuary rite: the Slavs cremated their dead, while the Avars practiced inhumation. The archaeological finds too show a rich diversity: the costume shows a blend of Slavic, Avar, and western Germanic elements, and the pottery recovered from settlements indicates the use of both Slavic and Avar wares.[10]

At the beginning of the ninth century, the differences in the ethnic background of the various groups of this population were still reflected in the burial rite and in the costume. At the same time, certain jewellery articles and the tools and implements of daily life can best be described as being non-group specific, "imperial" in nature. These articles were mass produced in *manufactura*-like workshops and showed a strong Carolingian influence.[11] This tendency towards homogeneity became stronger from the 840s; it is reflected in the finds, which were widely used by all social groups.[12] The shift in social relations, leading to the emergence of a new, early feudal aristocracy, also influenced the products of various crafts – craftsmen now had to cater to the demands of a genuine court and its retinue, and to produce a wide array of weapons and spurs, as well as imaginative silver and gold jewellery and antler carvings. The finds of the so-called "Byzantine-oriental" find horizon were earlier regarded as representing the characteristic artefact types of the Moravian Principality,[13] and their widespread distribution was interpreted as a reflection of the expansion of "Greater Moravia".[14] However, the growing number of jewellery articles and other artefacts of daily life of this type from the territory of the one-time *comitatus* of *Mosaburg*/Zalavár clearly indicates that this find horizon can best be interpreted as expressing social, rather than ethno-cultural relations, since this *comitatus* was never part of the Moravian Principality (Fig. 1).

In spite of the strong tendency toward cultural "westernisation" and homogeneity from the mid-ninth century, the rich diversity of the culture of Pannonia owing to the different background of the peoples gathered "from all around" should not be

8 *Conversio* c. 11; Wolfram 1979, 53-54.
9 Szőke 1994; Sós/Salamon 1995.
10 Burial grounds of this group have been uncovered by the present author at Zalakomár, Kehida and Söjtör in County Zala.
11 Szőke 1992.
12 Szőke/Éry/Müller/Vándor 1992.
13 Poulík 1948; Hrubý 1955; Dostál 1965; *idem* 1991; Schulze-Dörrlamm 1993.
14 Sós 1973, 56-65, Abb. 13-19.

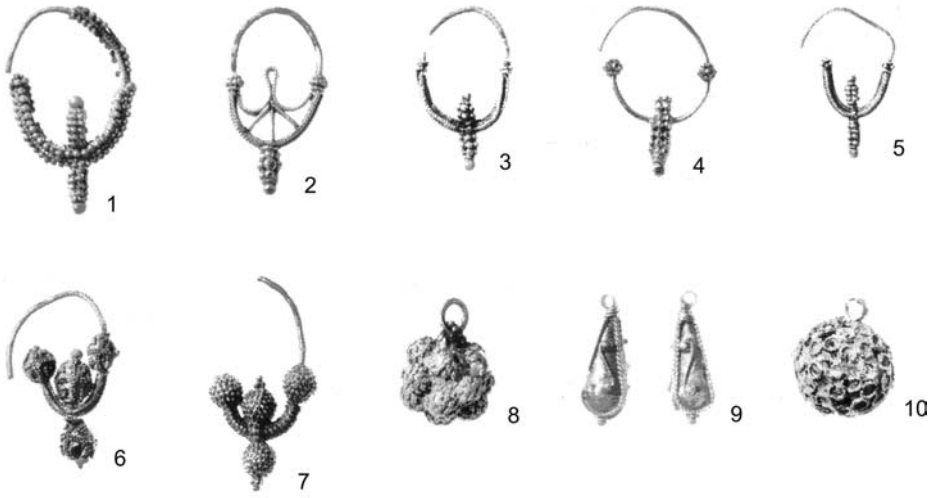

Fig. 1. Silver and silver gilt jewellery from the burials around the pilgrim church at Zalavár-Városziget

overlooked. A Danubian Bulgar origin is reflected in the artificially deformed skull of a male burial,[15] and by certain pottery shapes and decorations, the signs and symbols incised on bricks,[16] and the highly popular earrings with grape-bunch pendants.[17] A Byzantine sword most likely also reached Mosaburg through Danubian Bulgar mediation.[18] Other cultural influences are reflected in Alpine jewellery articles, such as the earrings and finger-rings of the Vor-Köttlach and Köttlach I phase,[19] and by the ornaments and artefacts of daily life, which were widely used in Moravia.[20] One particular mortuary rite involving cremation burial in a so-called house of the dead, which has been documented in the *Mosaburg*/Zalavár area, has its best parallels among the northwestern Slavs (e.g. the Lutizes[21]). In sum, we may say that the cultural diversity of the Pannonian *comitatus* in the ninth century reflects the diversity of the regions east of the Carolingian Empire, from the Baltic to the Pontic.

15 Éry 1992.
16 Comp. also the unpublished finds from the author's excavations at Zalavár-Városziget between 1996 and 1998, which include a brick with the incised figure of a horse and a pottery sherd with polished surface bearing a secondarily incised |Y| sign.
17 Szőke 1992b, 124-130.
18 *Ibid*., 92-97.
19 Giesler 1980; Kramer 1994.
20 Szőke 1992b, 151–159.
21 *Idem* 1996.

The *civitas Priwinae* – Priwina's "town"

Mosaburg's fortifications were investigated by Géza Fehér in the early 1950s. In his view, the entire island was enclosed by a rampart constructed by packing earth between two parallel lines of timber posts connected with wattling.[22] The remains of a palisade of durmast oak running north to south were excavated by Ágnes Cs. Sós.[23] More recently, a roughly 2.5 m deep and 12 m wide ditch was uncovered, which cut through the "neck" of the L shaped island in a west to east direction.[24] The north to south palisade wall continued westward beyond this ditch. It would appear that the Carolingian *civitas* was divided into three parts. The southern third, south of the ditch and rampart, accommodated the court (*curtis*) of Priwina and Kozel, and can be identified with the *munimen* described in the *Conversio*. The ecclesiastic dignitaries and priests lived in the island's northern part, in an area similarly enclosed by a palisade. The archbishop of Salzburg and his retinue were given lodging in this area during his visits. East of these two courts lies in a yet uninvestigated area, which perhaps functioned as a kind of bailey and accommodated the houses of the craftsmen and merchants, or perhaps the fortified manor houses of Priwina and Kozel's most trusted followers. The excavations have revealed that the inhabitants of the *civitas* lived in large buildings with several rooms set on posts (and not in sunken houses typical for the rural settlements of the period). Scattered around these houses were work-pits, storage pits, wells, ovens and the like.[25]

The churches of *Mosaburg*/Zalavár

The *Conversio* mentions three churches in Mosaburg. The first lay *infra munimen Priwinae*. This church, dedicated to St Mary, Mother of God, was consecrated by Liupram, Archbishop of Salzburg, on January 24, 850.[26] The second church, *infra civitatem*, in which the martyr Hadrian was laid to rest (*in qua ecclesia Adrianus martyr humatus pausat*), and which was therefore exceptionally well suited to worship, had been built on the initiative of Liupram.[27] The third church, *in eadem civitate*, was dedicated to St John the Baptist[28] A total of twenty-eight churches had been erected outside

22 Sós 1963, 31-38, Abb. 9; *idem* 1973, 107-112, Abb. 31-33.
23 *Idem* 1994.
24 Author's excavation in 1996-1968 in the southern part of Zalavár-Városziget; unpublished.
25 Author's excavation in 1994-1998 in the central part of Zalavár-Városziget; unpublished.
26 *Conversio* c. 11; Wolfram 1979, 52-53, 130-133.
27 *Ibid*., 54-55, 135; Tóth 1999.
28 Wolfram 1979, 54-55.

the "town" (*foris civitatem*) under the reign of Priwina and Kozel (ca. 850-870), each of which had been consecrated by the successive archbishops of Salzburg.[29] Only three of these churches have been excavated. The ground plan of a fourth church is known from an ink drawing made by Giulio Turco. The location and identification of the various places and churches mentioned in the written sources are uncertain.

Zalavár-Vársziget: The church on Giulio Turco's ink drawing (Fig. 2)

On the testimony of the drawing made by the military engineer officer Giulio Turco in 1569, the church in the island's southern part was a three-nave church with a semicircular apse measuring ca. 22.5-24 m by 9-10 m. It lay north of an Árpádian age monastery, which had been rebuilt into a border fortress during the Ottoman period. This building has been completely destroyed during the past centuries. Today, there is a sand mine over the site of the church and the later fort.[30] The excavations conducted between 1951 and 1954 east and north of the church's assumed location brought to light the superimposed burials of a cemetery. The nature of the burials suggested that they were originally part of a church graveyard. The earliest graves (the large coffin burials) could be dated to the mid-ninth century, while the later burials fell into the Árpádian age.[31] The exact location of the one-time church cannot be determined owing to the lack of archaeological evidence, and the grave finds from the burials do not reflect the continuous use of the burial ground during the tenth century.

The church on Giulio Turco's drawing can most probably be identified with the Benedictine church dedicated to St Hadrian of the monastery founded by the saintly King Stephen in 1019. However, this church is not identical with the church dedicated to St Hadrian mentioned in the *Conversio*. A distinction was drawn between the *civitas* and the *munimen* in the ninth century, with the *munimen* described as Priwina and Kozel's court in the island's southern part, and thus this church can be identified with the one which was dedicated to St Mary in the ninth century and was later, during the Árpádian age, re-dedicated to St Hadrian.[32]

29 von Bogyay 1955; *idem* 1960.
30 Tóth 1990, 148.
31 Fehér 1953; *idem* 1954, 201-262; Sós 1963, 68-91.
32 For the change of the church's name and the various interpretations of this change, comp. Szőke 1998, 271, notes 104-105.

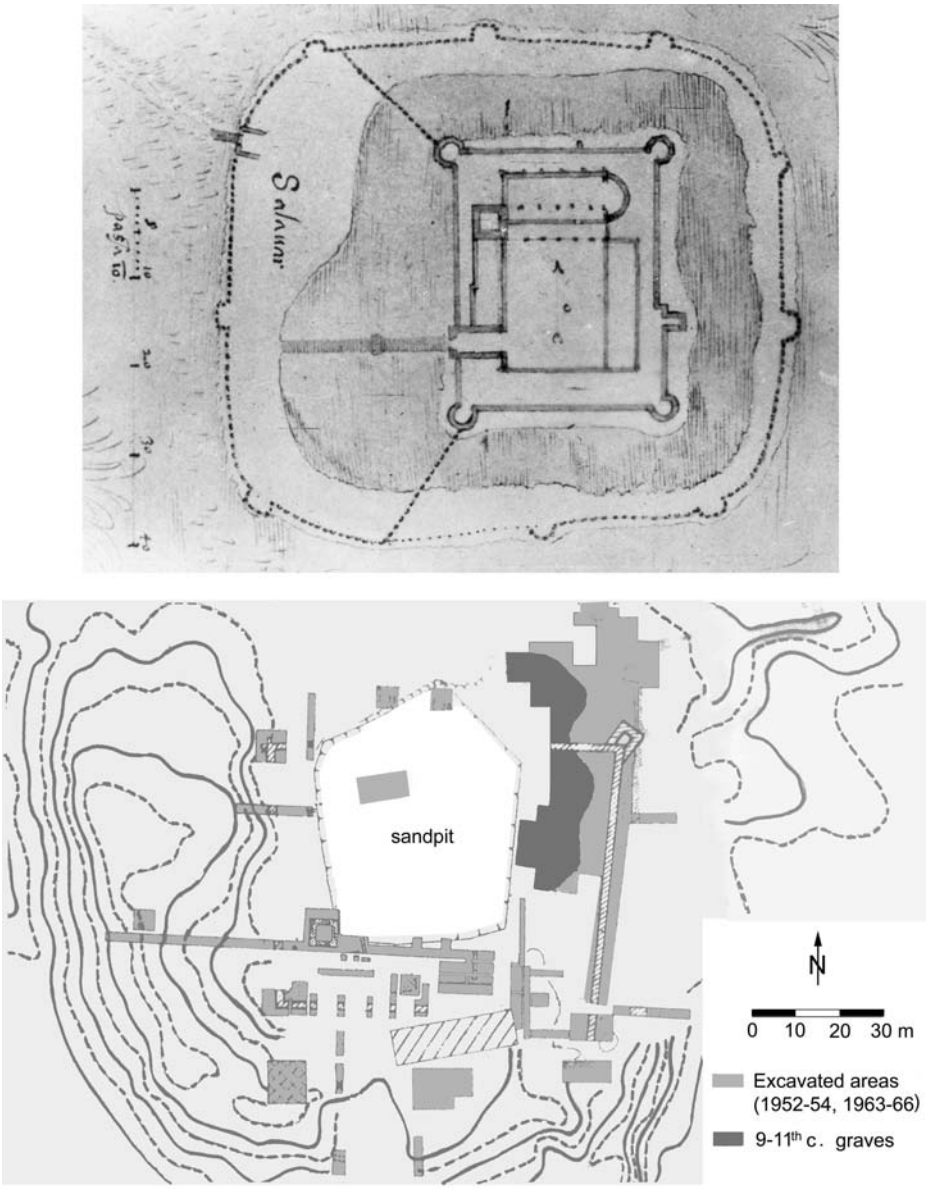

Fig. 2. Giulio Turco's plan of the fortress at Zalavár and the map of the excavation of the site

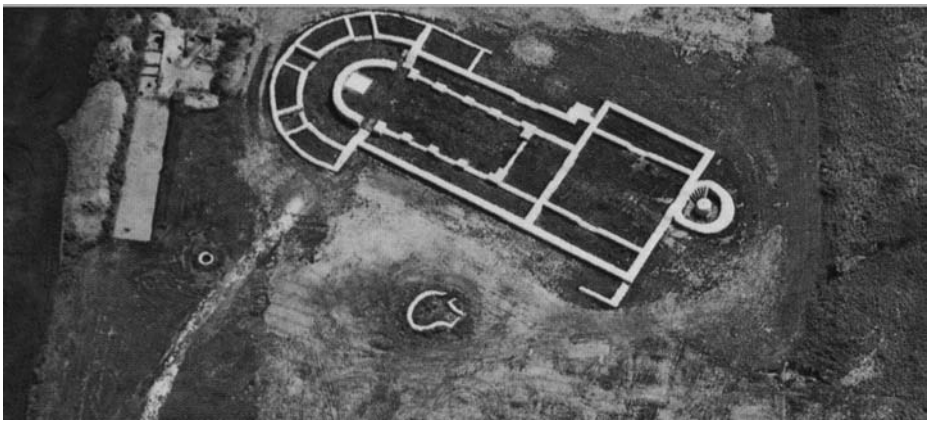

Fig. 3. Aerial photograph of the reconstructed ground plan of St Hadrian's church at *Mosaburg*/Zalavár

Zalavár-Városziget: the pilgrim church with the outer ambulatory crypt (Fig. 3)

At the beginning of the 1980s, Ágnes Cs. Sós uncovered the foundations of an unusually large church measuring ca. 50 m by 24 m in the centre of the island. Very little survived of the church itself. What could be identified were the foundation trenches underneath the one-time floor level. Unfortunately, the documentation of the surviving remains was rather inaccurate and thus the excavation records of Cs. Sós did not enable an exact reconstruction of the church's ground plan.[33] I conducted a control excavation in 1999-2000 in order to clarify the ground plan of this church. The still extant remains of the foundation walls and the church's interior were uncovered and a detailed documentation was made of the remains. As a result, a reconstruction of the church based on this documentation was made in its original location.

The three-nave church had a semicircular apse. An outer ambulatory crypt lay outside the apse wall. A "narthex" lay in the west and, possibly, a monastery with a square courtyard flanked by two buildings. A round bell tower stood by the western entrance. Inside the ambulatory crypt were three chapels and four family crypts. Other family crypts lay along the church's northern and southern side. A stone reliquary grave was found underneath the chancel. Foundation pits for the wooden columns of an earlier building were uncovered underneath the "narthex". Ágnes Cs. Sós interpreted these as the remains of a wooden church.

Even though little has survived of the basilica's interior, the few finds which have been brought to light, are quite noteworthy. The fragments recovered from the wide

33 For a detailed description of the church based on Ágnes Cs. Sós' excavation report, comp. Szőke 1998, 271-278 and notes 108-152, fig. 2.

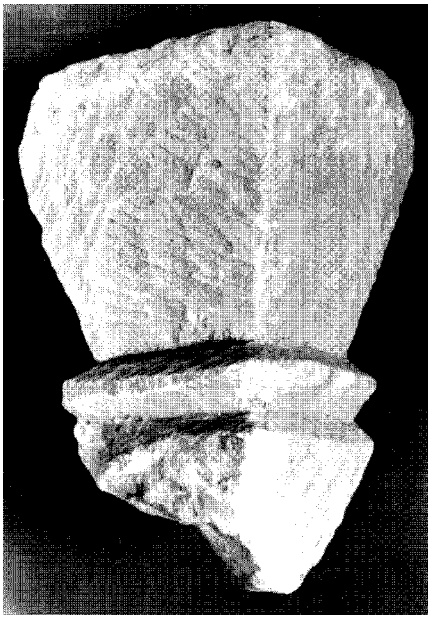

Fig. 4. Sandstone capital, probably from the pilgrim church at Zalavár-Városziget

ditch protecting Priwina's *munimen* suggest that the basilica had a terrazzo-like floor set in mortar. A simple, undecorated, cuboid sandstone capital from the same ditch probably adorned one of the church's columns (Fig. 4).[34] Fragments of a colourful wall plastering were found in the fill of the graves. One of the grave fills contained a few floor tiles with an incised interlace design. Additional evidence for the adornment of the church interior is provided by the painted and coloured glass windowpane fragments bearing the images of Christ and various saints ands angels, as well as letterings, found under the brick flooring of the ambulatory around the chancel (Fig. 5).[35] The nature and the type of the fragments painted with a figural scene suggest that they had either been part of the decoration of a *fenestella* or of an ornate reliquary shrine, while the coloured glass fragments probably came from church's windowpanes. The remains of a glass workshop, where these glass panes were made, were uncovered not far from the church's apse.[36]

34 For a discussion of the treatment of the stone surface, comp. Autenrieth 1988, 30 (e.g. Michelstadt-Steinbach and Reichenau-Oberzell).

35 The imagery of the figures on the glass pane fragments shares certain similarities with the frescoes in the St Prokulus Church near Naturn in southern Tyrol. Comp. Eggenberger 1974. For early windowpanes in the Carolingian Empire, comp. also Gerke 1950; Rode 1974; Dell'Acqua 1997; Wedepohl 1999. The painted and coloured windowpane fragments have been published by Szőke/Wedepohl/Kronz 2004, together with the results of their scientific examination.

36 Szőke/Wedepohl/Kronz 2004, 88, Figs 2-3. For comparable finds, comp. also Ausstellungsband Paderborn 1999, 160-185, and Pohl/Haevernick/Riederer/von den Driesch 1972; Stephan/Wedepohl 1997.

Fig. 5. Green glass fragments with silver-stained images and lettering from St Hadrian's Church

It seems to me that the church had a single architectural period and that it was a pilgrim church[37] built for the veneration of martyrs.[38] Its purpose[39] was identical to that of similar contemporary Saxon, Thuringian and Bavarian churches.[40] It was believed that the saints buried in these churches would, with the help of God, perform various miracles and thus attract many people, whose faith would thus be strengthened.[41] This imposing church could only have been built by a wealthy and powerful person, and it seems reasonable to assume that this person was none other than Liupram, Archbishop of Salzburg. The church can therefore be identified with the one which, according to the *Conversio*, was built *infra civitatem Priwinae* between 850/54 and 859, and in which "the martyr Hadrian was laid to rest" (around 870).

37 Arbreiter 1988.
38 Wallrath 1950; Claussen 1950.
39 Bandmann 1961; Boeckelmann 1956; Ousterhout 1990.
40 Haas/Piendl/Ramisch 1962; Lobbedey 1978; Jacobsen 1992.
41 Claussen 1987, 261.

A graveyard used during several periods lay around the church. The earliest burials date from around the mid-ninth century, the latest from the beginning of the tenth century. Only the ruins of the church remained by the beginning of the Árpádian age. The burials of this late period, lying by the church's southern side, can be associated with a church lying a little to the south. This church, dedicated to St Mary in the ninth century, was re-dedicated to St Hadrian at the beginning of the eleventh century.

The church at Zalavár-Récéskút

A three-nave stone basilica was investigated by Aladár Radnóti in 1946, 1947 and 1953, and by Ágnes Cs. Sós 1961 and 1963. Built on a sand island north of Zalavár-Városziget, the rectangular basilica with three semicircular apses recessed into its wall measured 20.2-20.5 m by 12.1 m. According to Aladár Radnóti, four architectural periods could be distinguished (Fig. 6).[42]

The first, probably single nave basilica with three apses, a narthex and a "baptistery" was built in the ninth century. The terrazzo flooring of the apses lay slightly higher than the stone paving of the nave. The walls of the apses were painted. The church could be entered through entrances in the west and south. The first church burnt down in the ninth century. The church was rebuilt either soon afterwards or only later, in the eleventh century. The nave was divided into three aisles with two rows of columns.[43] The third and fourth architectural periods represent the later Middle Ages.[44]

Ágnes Cs. Sós noted that Aladár Radnóti's documentation marked several foundation pits for columns, whose function was unclear. She conducted a control excavation in order to determine their function (Fig. 7).[45] Based on the findings of her investigations, she reconstructed two additional architectural periods. The first sacred building on the site was a wooden church, of which very little has survived; its dimensions could only be approximately reconstructed from the burials which had surrounded the building. It would appear that the wooden church had been roughly the same size as the later stone basilica. A second church could be reconstructed from the stone and brick fragments recovered from Level "R", which was cut by the foundation pits dug for the columns (spaced 2 m apart) of the next building. This wood and stone basilica was a large, three-nave building measuring 30 m by 19.5 m. Ágnes Cs. Sós suggested that the first church, constructed entirely of wood, had been built at the beginning of the ninth

42 Radnóti 1948.

43 One of my students, Maxim Mordovin, re-examined the excavation records of Aladár Radnóti in his MA Thesis, completed in 2004. He concluded that the stone basilica probably had two rows of pillars dividing the nave into three aisles from the very beginning.

44 Aladár Radnóti's excavation documentation was published by Sós 1969.

45 *Ibid*.

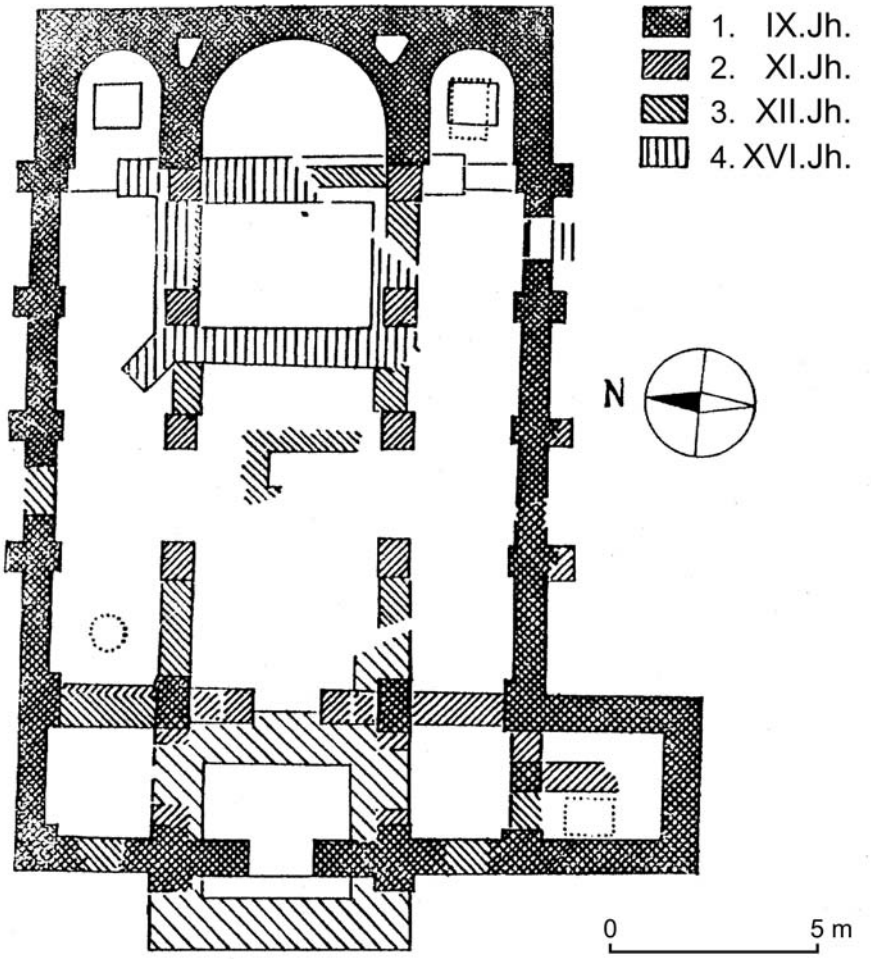

Fig. 6. Architectural periods of the basilica at Zalavár-Récéskút

century, while the second church, built from wood and stone, could be dated to the second half of the ninth century. The third basilica type church, built entirely of stone, was erected in the eleventh century.

A heated debate over the architectural periods and the dating of the church began immediately after the publication of Ágnes Cs. Sós' excavation report.[46] The documentation of her excavation, however, suggested that Level "R" post-dated the construction of the stone basilica and thus the foundation pits for the columns too could be dated to

46 For a summary, comp. Szőke 1976; contra: Sós 1976.

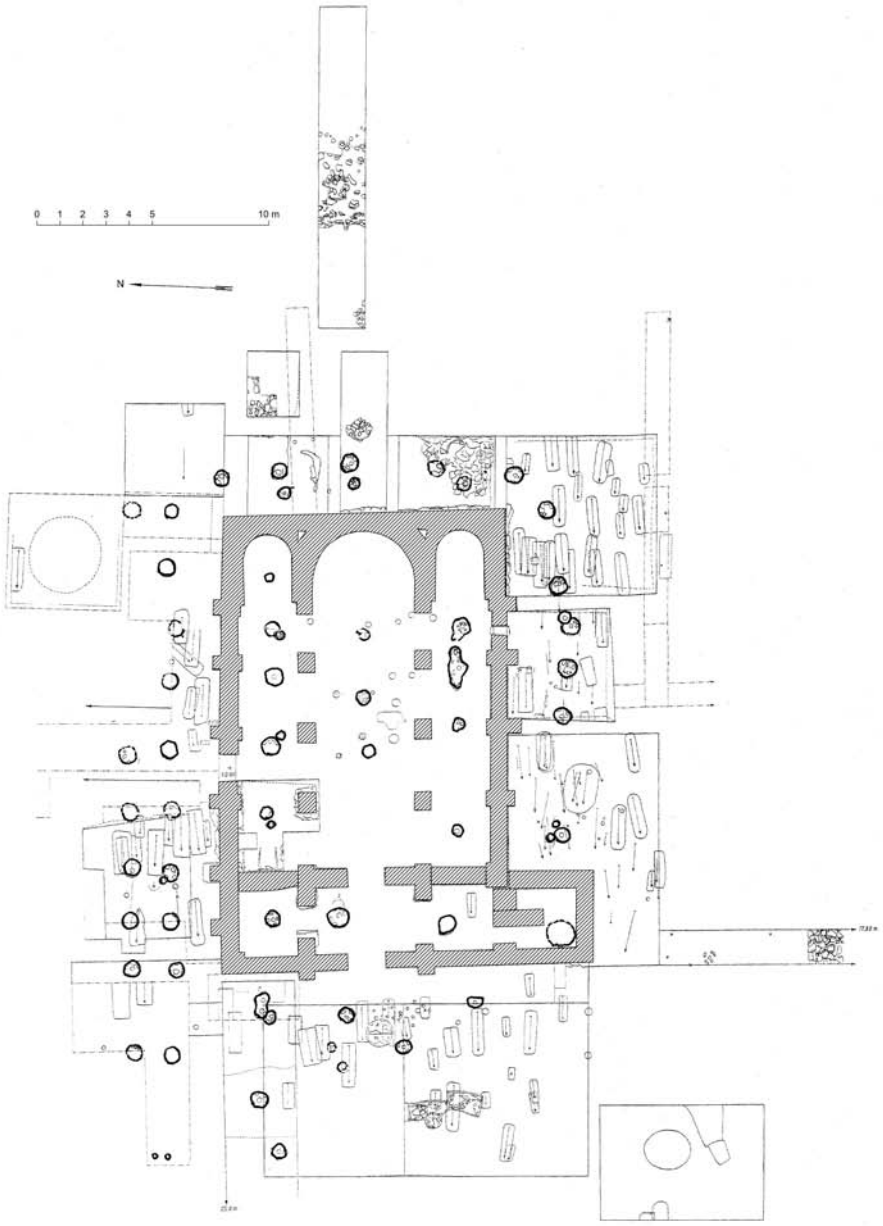

Fig. 7. Relation between the stone basilica and the foundation pits of the columns at Zalavár-Récéskút

a later period. Sándor Tóth[47] suggested that the pits had been dug for the scaffolding during the reconstruction of the church at the beginning of the Árpádian age.[48] It seems to me that these columns can be better interpreted as the remains of a tenth century building which no longer had a sacral function, especially in view of the controversies surrounding the scaffolding theory (such as the stones found in the pits and the lack of burials from the Árpádian age).[49]

It is also uncertain to whom this church was dedicated and with which of the churches described in the *Conversio* it can be identified. Thomas von Bogyay identified it with the church dedicated to St John the Baptist in view of the "baptistery".[50] However, the presence of a "well" in the "baptistery" is uncertain, and in Ágnes Cs. Sós' opinion, the "well" can be better interpreted as a foundation pit for one of the columns of the second wood and stone church.[51] In contrast, Dezső Dercsényi,[52] Géza Entz,[53] and Sándor Tóth[54] believed that the church could be identified with the (first) Árpádian age church dedicated to St Hadrian. This interpretation is contradicted by the fact that no graves from the Árpádian age have been found around the church and that there is no evidence whatsoever for any building activity during this period. The church dedicated to St John the Baptist, described as lying *in eadem civitate*, must obviously be sought at Zalavár-Vársziget. It follows from the above that the church uncovered at Zalavár-Récéskút cannot be identified with any of the buildings mentioned in the *Conversio*. It may have been the private church of one of the noble families in Priwina and Kozel's retinue, resembling the wooden church uncovered at Zalaszabar–Borjúállás-sziget.

The church at Zalaszabar-Borjúállás-sziget (Fig. 8)

The remains of a single nave hall church with a rectangular chancel and narthex measuring 17 m by 7 m were uncovered by Róbert Müller in the early 1980s. The wooden church was built in the style of above-ground log cabins. A narrow stone wall separated the apse from the nave; it can probably be interpreted as a rood screen. A total of 805 burials were uncovered around the church, dating from different periods. The overwhelming majority of these burials date from the ninth century, with only a smaller part falling into the tenth century. The use of the cemetery ended before the start of the

47 Tóth 1974.
48 *Ibid*., note 3; for a similar view, comp. Szőke 1976.
49 Szőke 1998, 283-284.
50 von Bogyay 1955, 405.
51 Sós 1969, 58-62.
52 Dercsényi 1948.
53 Entz 1964.
54 Tóth 1990, 149.

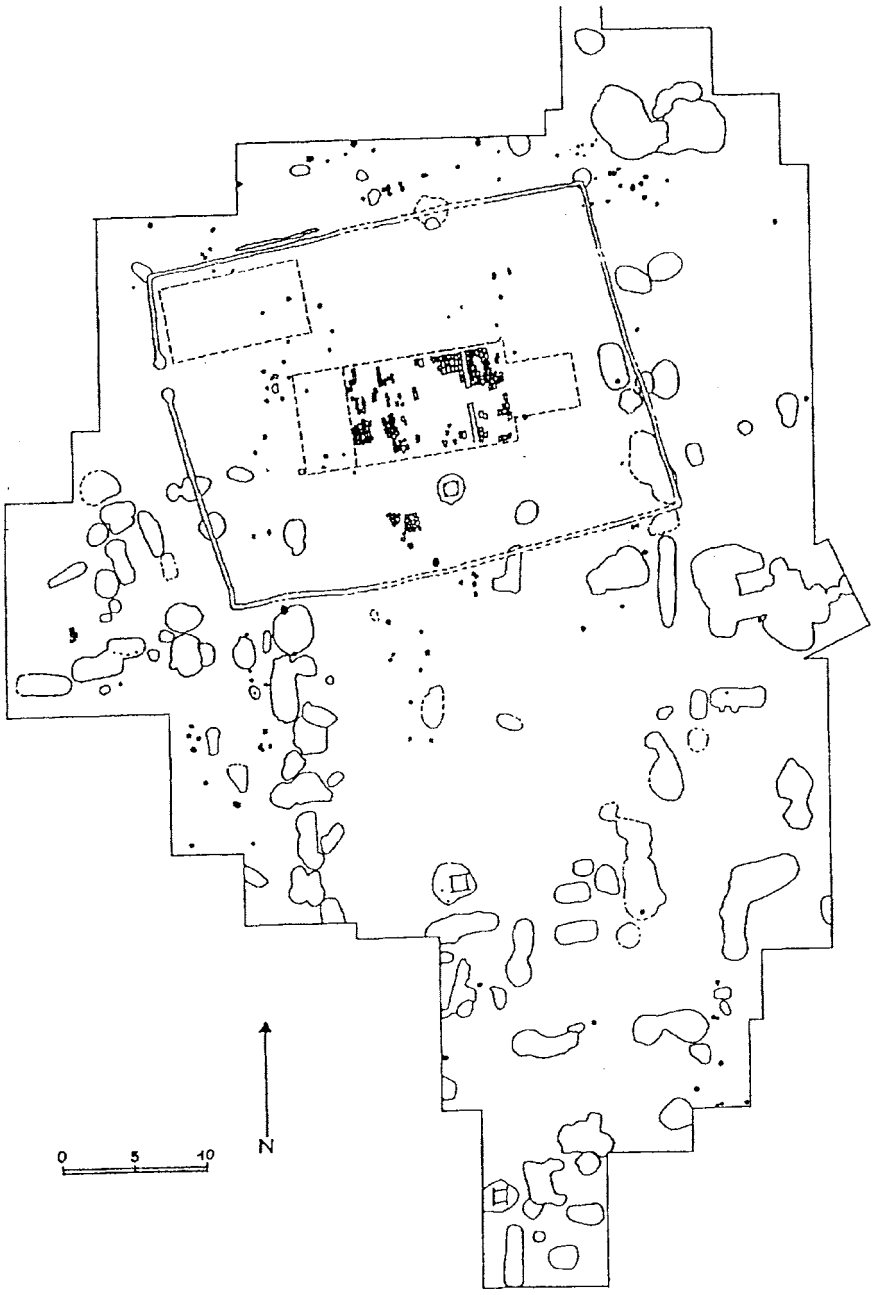

Fig. 8. Ground plan of the fortified nobleman's court with the church at Zalaszabar-Borjúállás-sziget

Árpádian age. The church lay in an area enclosed by a palisade, a fortified nobleman's court. A wooden building, the residence of a nobleman and his family, lay by the entrance inside the palisaded area. Róbert Müller identified this church with the house of worship dedicated to the protomartyr St Stephen, described as belonging to a certain Wittimar in the *Conversio*, which had been consecrated by Adalwin, archbishop of Salzburg in 865.[55]

(translation: Magdalena Seleanu)

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55 Müller 1994; *idem* 1995.

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Chapter III.

Eastern Central Europe

"Tribal" societies and the rise of early medieval trade: archaeological evidence from Polish territories (eighth-tenth centuries)

Andrzej Buko

Introduction

The decline of antiquity in Central Europe in the fifth century is characterised by a breakdown not only of political, but also economic and socio-cultural structures. In many territories a time of economic stagnation, attested by archaeological data can be observed. At the beginning of the early medieval period (sixth-seventh centuries) several depopulated areas were successively settled by Slavs. But this was not a singular or uniform process. At the same time both in Scandinavia and on the south coast of the Baltic there was a continuously developing economy without the slump occurring in the rest of continental Europe. Notably in Scandinavia, contrary to the situation in Central Europe, after changes brought about by the migration of some ethnic groups to the south from the seventh century onwards one can observe a stabilised cultural pattern based on warfare. At the same time, an enormous progress in shipbuilding made it possible to undertake long-distance expeditions. As a consequence, Scandinavians obtained economical impulses from different regions of Europe.

Before the tenth century, the contacts between the Baltic zone and Central Europe were maintained by means of overland and river transport. Since ancient times, the continental rivers in particular had served as a suitable transportation net, assuring connections to the Baltic areas. This net probably was one of the important factors for the location of the earliest Polish town centres, which arose at the junction of such roads. In the Polish Lowlands such natural routes, as well as the overland routes running alongside these rivers were decisive for the development of local pre-state tribal communities.[1] Overland routes did not become more important until the rise of the Polish State in the late tenth century with new ones being established, many of them cut through forests.

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1 When I write "tribal" I mean it in a sense more similar to the "ethnic group" definition found in recent anthropological studies rather than to the classic definition of "tribe" (cf. Jones 1997; Jenkins 1997).

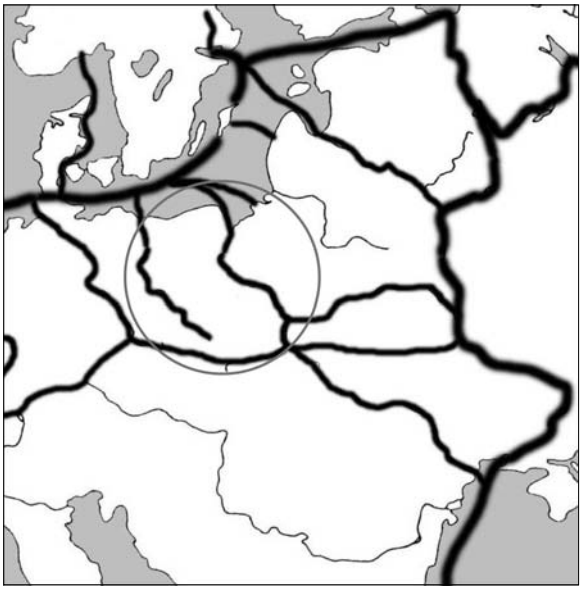

Fig. 1. Early medieval trading routes throughout Central Europe. The circle indicates the location of the Polish territories

The effects of early trade and exchange on settlement patterns were different in the regions of the Baltic coast and in Southern Poland. Between these two flourishing regions characterised by intensive exchange relations, there existed the intermediate zone of Great Poland. Its gradually growing prosperity, finally leading to the establishment of the tenth-century Polish State, was due to the earlier economic advancement of the regions in the north and south.

The southern coast of the Baltic Sea: the long durée of economic prosperity

Since the beginning of the early medieval period the regions along the coast of the Baltic Sea differed significantly from the continental and southern ones. First of all, in the territories of Pomeranian the economic decline of the fifth century was not as marked. In difference to other Polish regions settled by Slavs, the Pomeranian regions produced only typical Slavic pottery (of the so-called Sukow-Dziedzice type), but not a single archaeological piece of evidence for the sunken huts held to be of typical Slavic building-type. There is also no evidence for Slavic funeral rites, as known from regions further south. Moreover, some archaeological findings of pre-Slavic character can be attested here continuously until the end of the sixth or even of the early seventh century. It is still an open question if the first Slavs were assimilated by the local communities of the post-Roman period, and if so, how? It has also to be asked, why the Scandinavians, already present in the neighbouring territories of the Polabians (Mecklenburg,

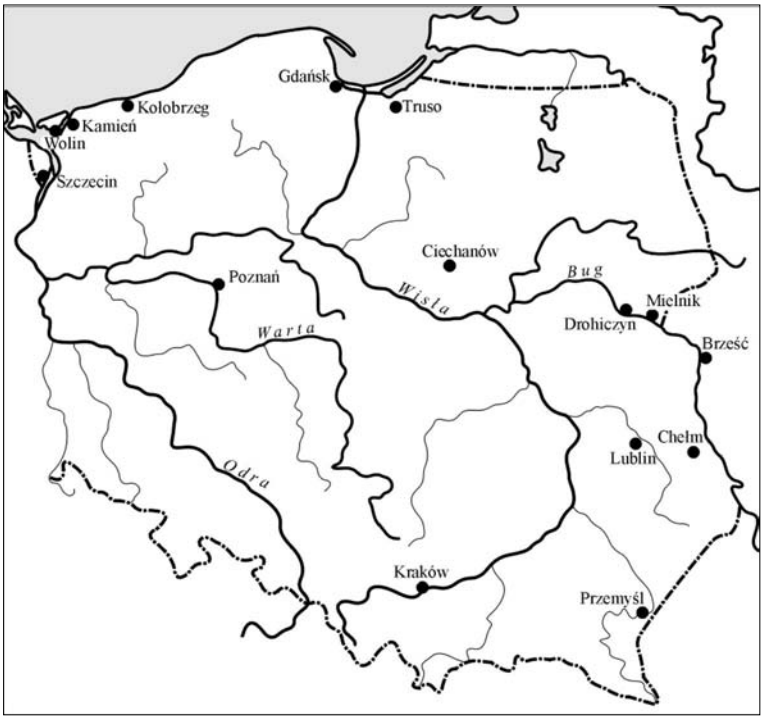

Fig. 2. Map of early medieval (before the end of the tenth century) trading centres in the Polish territories

Western Pomerania) as well as in the western territories of the Baltic at the southern coast of the Baltic Sea since the seventh century, did not show any early interest in the Pomeranian region. It was only in Pomerania's late eighth century when its first trading ports, comparable with those earlier ones of the Peene River or of Rugen Island came into being.[2] At the same time, trading routes of regional as well as of supra-regional importance were activated throughout the vast Polish territories. The decisive impulse for their development was the rise of the Baltic trading zone. Thus, the former regional trading routes became an important element of trans-European trading (Fig. 1). This trading network brought together the maritime character of the Scandinavian economy and the agrarian type of Slavic economy.[3]

For many years the role of Scandinavians in creating early Slavonic political structures has been under discussion. Opinions differ quite significantly and reach from a total negation of any Scandinavian presence to ascribing to the newcomers a crucial role in the political and economic development of local communities. Actually, a variety of

2 Cf. Dulinicz 1999.
3 Leciejewicz 1979, 179-180; Łosiński 1997, 74.

reciprocal relations may have existed. Firstly, I would like to emphasise piracy both of Scandinavians and Slavs, whose aim was to gain slaves from the territories south of the Baltic coasts, salt from Kołobrzeg, amber and corn. The archaeological finds confirm that the pirates offered luxury products to the local people. Besides jewellery, many pieces of whetstones made from Norwegian soapstone, high-quality Scandinavian iron products and many other imports have been found.[4] Starting from the late eighth century, the southern coast of the Baltic Sea not only sees the presence of Scandinavian imports, but also of Scandinavian settlers (warriors, traders) and representatives of Scandinavian elites living among the Slavs.[5] Thus, a broad economic zone composed of Scandinavians, Balts, Finns, Frisians and Slavs developed around the Baltic Sea. The early trading ports situated around the Baltic Sea played a crucial role in this development, which finally also reached Pomerania.

Pomerania: archaeological evidence of early urbanisation

In contrast to other regions of the Polish territory, there are several sites in Pomerania considered by archaeologists as evidence for early urbanisation. They cluster in two regions: the first one in the west includes Szczecin, Wolin and Kołobrzeg, while the eastern cluster is composed of Gdansk and Puck. Moreover, before the tenth century, Truso situated in the territory of the Prussians played a special role (Fig. 2).

The most important among the above-mentioned settlements was Wolin (Fig. 3). Its development began about 50 years after that of similar places known from neighbouring Polabia. According to the archaeological data, there is no uniform pattern of house building in the Wolin area. Besides buildings of the post-construction type – characteristical of Saxon and Scandinavian building traditions – there are many other kinds typical of the Slavonic milieu.[6] It is commonly agreed on that most of the archaeological finds including the silver hoards from this central site and from its vicinity show direct relations with the Danish milieu.[7] Nevertheless, it is questionable to define this centre as being of purely Scandinavian origin, particularly when considering that it's ascent was based upon an earlier local Slavic settlement development. Moreover, no ethnical or cultural differentiation of the living quarters has been attested. For these reasons, the assumption of a cohabitation of representatives of different ethnic groups in Wolin, including Scandinavians seems to be much more probable.[8] The same can be supposed of the earliest history of Kamień situated next to Wolin, which took over the prerogatives

4 Cf. Łosiński 1997.
5 See Chudziak 2003, 125.
6 Filipowiak/Gundlach 1992.
7 Cf. Żak 1963/1967, 42; Duczko 2000, 29.
8 Cf. Żak 1963/1967, 43.

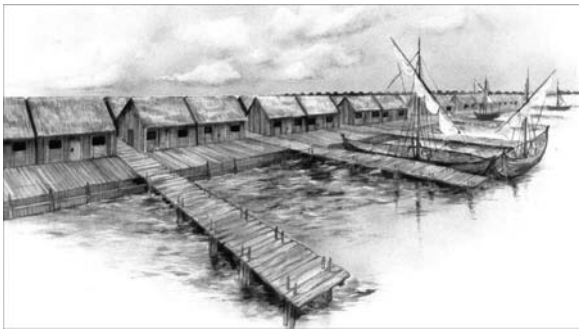

Fig. 3. Reconstruction of the harbour area in early medieval Wolin (ca. 900)

of Wolin during the eleventh -twelfth century and rose to become both a centre for the West-Pomeranian princedom and a bishop's seat.[9] Szczecin's development was also based upon older local Slavic settlement traditions. It was an important strategic point, playing a crucial role in the politics of the first Polish rulers, especially as a starting point for their expansion to the Polabians.[10]

In the archaeological settlement complex of Świelubie at the Parsęta River, situated 100 km east of Wolin burial mounds with many grave gifts comparable to those well-known examples from Swedish Birka have been discovered.[11] According to W. Duczko,[12] a detailed study of their features would show that certain ethnic groups which lived here were settlers from the Swedish Mälaren Lake-region. Perhaps an attractive argument in favour of a settlement here were the salt resources in Kolobrzeg – the subject of intensive trade. But until now, it is not possible to decide where the people buried at Świelubie lived. Perhaps it was in the nearby Bardy stronghold, as W. Łosiński[13] argues, which according to the archaeological data was linked to the local Slavonic communities, or perhaps at another, as yet unidentified settlement centre that was in their hands.

The above-mentioned settlements played only a temporary role in the history of early trade because they finally disappeared in the late ninth or early tenth centuries. In the case of Świelubie, the successor of this settlement centre seemingly was the nearby Kołobrzeg, whose origins go back to the ninth century. A dislocation of the functions of the older centre to the newer one has to be assumed, which would be an interesting example for regional settlement history. At the same time, or at least in the early tenth century, Kołobrzeg shows the traits of an early urban centre.[14]

9 Cf. Filipowiak 1959.
10 Cf. Leciejewicz 2000, 139.
11 See: Łosiński 1979.
12 Duczko 2000, 31.
13 Łosiński 2000, 19.
14 *Ibid*., 19.

If we try to summarise our remarks now, it seems necessary to emphasise the well-defined regularity of the settlement pattern. In case of the western ports of trade such as Wolin, the direct connections with the Danish milieu are evident; while in the case of settlements situated at the Parsęta River interactions with Sweden are much more convincing. Beside the sites discussed above, there are some others that need to be mentioned: the ship burial from Chełmska Mound (near Koszalin) and the many silver hoards from this area.[15]

The archaeological data from the eastern part of Pomerania show a pattern similar to the sites located in the central part of the Baltic coast. Special attention has been paid to the burials from Ciepłe near Gniew. Before the Second World War, some very rich burials were explored, including that of a warrior with a sword and equestrian equipment, together with weights.[16] There are different interpretations concerning the significance of this grave. Some scholars stress the mercantile aspect of these finds, while others emphasise the existence of representatives of Scandinavian elites – royal warriors, who maintained a very high social status in the local Slavic milieu.[17] According to W. Duczko[18] they most likely had connections with the Danish milieu on the British Islands.

Apart from Ciepłe, other archaeological sites located around the Bay of Gdańsk are very poorly investigated. Only a few authors have mentioned archaeological finds of probable Scandinavian origins.[19] But detailed data, as well as the character of the contacts, their intensity and importance remain beyond archaeological analysis. An exception is Truso situated in Prussian territory.

Truso: port of trade in Prussian territory

In the year 890, the Anglo-Saxon traveller Wulfstan sailed from Hedeby in Denmark to Truso in Prussia. Although his written account contains a lot of information on the location of the site, until the 1980s all efforts to identify its position were unsuccessful. In 1982 in a small place called Janów Pomorski (near Elbląg), the remains of a large trading settlement were found.[20] For the next decades up until the present this site has been the subject of archaeological scrutiny. Today we know that the early medieval port of trade was situated on the river Dzierzgoń. The whole area is known as a zone of intensive commercial contacts between Balts, Slavs and Scandinavians since the

15 Cf. Duczko 2000, 33 with references.
16 Cf. Żak 1957; Kara 1998, 509.
17 Cf. Chudziak 2003.
18 Duczko 2000, 35.
19 Cf. Żak 1963/1967.
20 Cf. Jagodziński; Kasprzycka 1991.

Fig. 4. Danish coin (KG 3 type, mid-ninth century) – reused as a pendant, found in building no. 2 in Truso (Janów Pomorski)

beginning of the early Middle Ages. There is considerable archaeological evidence that this area was settled by Scandinavians in the ninth century. A theory confirmed by the medieval cemetery identified some years ago in Elbląg.

The site at Janów Pomorski (Truso) covers approximately 15 ha. The long-house shape of the buildings and their spatial arrangement resembles the pattern known from the Danish trading port of Haithabu.[21] Besides long houses there are many structures attesting the harbour and areas where boats were repaired and maintained. As a result of the archaeological investigations, the remains of nine such boats have been identified.

There is much archaeological evidence from Truso confirming early trade and craftsmanship. This concerns activities relating to amber, antlers and animal bone, glass, iron and silver. Hundreds of coins from the site and many elements of scales and weights uncovered inside buildings provide evidence about the importance of early trade in the everyday life of Truso's inhabitants. Special attention has been paid to the coin finds from Truso. Most of them are Arabic dirhams dating from the 730s/770s to 821/822. Other coins are linked to Hedeby (Fig. 4) and one comes from the British Islands – an Æthelwulf denar of 845-848. It is still an enigma why there are so many coins dating from before the middle of the ninth century, but no younger ones. Such a chronology seems contradictory to the dating of many other finds, including jewellery and pottery. Some authors believe that some oriental coins from the eighth and ninth centuries were still in circulation during the tenth century.[22] Until now, there is no clear picture of the factors responsible for such a situation, these problems therefore will remain under investigation.

The pattern of spatial organisation identified in Truso was very common over a wide area around the Baltic Sea between the eighth- twelfth centuries. According to the archaeological data, the site dates from the early ninth to the middle of the eleventh centuries and its origins point to Danish settlers.

21 Jagodziński 2000.

22 Cf. Bartczak/Jagodziński/Suchodolski 2004, 44.

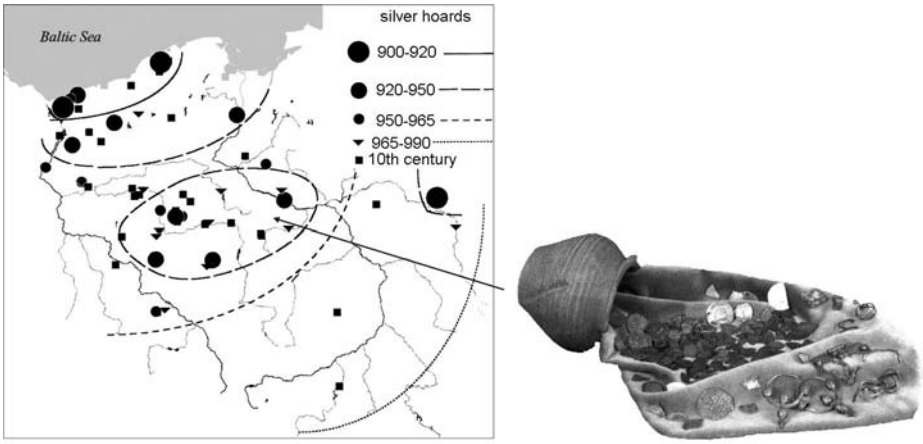

Fig. 5. Silver hoards from Polish territory (Great Poland – in the central circle) at the time of the rise of the Polish state (tenth century). On the right side – hoard of Maurzyce (around 973) composed of Arab, Byzantine and West European coins and Slavic ornaments

An early monetary zone?

The example of Truso, but also that of some of the other trading ports in Pomerania mentioned above, attests that monetary long distance trade developed earlier in the northern part of the Polish territory than in its other regions.[23] During the tribal period (eighth to early tenth centuries) Arab dirhams were predominant. We know of 26,000 such finds from the whole Polish territory.[24] Such a strong supply of Arab silver continued until the late tenth century, but ceased in the early eleventh century.[25] Contemporaneous to the decline of Arab silver since the late tenth century Byzantine milaresions appear in the Baltic Sea area. In terms of numbers unearthed, Poland with its 138 items takes the third place after the Swedish islands and Estonia. Since the late tenth century, denars from the German Empire start spreading over the Polish territories south of the Baltic Sea coast, becoming predominant during this time. With 84,000 such items from medieval hoards having been found, Poland takes second place after Sweden all countries situated around the Baltic Sea. There are also some coins of Carolingian origin, but they are relatively rare.[26]

The causes for the shift from a predominant use of eastern silver (the Arab dirham) to Western Europe's silver currency in the area around the Baltic remains an unexplained

23 Cf. Łosiński 1996.
24 Suchodolski 2001.
25 *Ibid*.
26 *Ibid.*, 90.

question.[27] Some symptoms of a beginning monetary crisis appear in the middle of the tenth century. Nonetheless, opinions about the reasons responsible for such a situation differ. According to S. Suchodolski[28] the Baltic trade of the tenth century became unprofitable for Arab merchants, because the goods imported until then – e.g. furs, slaves – might have turned out to be too expensive in a new political and economic situation. Probably there was less silver, what might have caused a considerable augmentation of its value. We must consider the long distances between the Near East and the Baltic Sea area. In this situation, merchants from the West, encouraged by the Vikings, particularly the Varangian movement, intercepted the prerogatives of eastern traders. As a result, the Baltic countries were bound closer to the Western European economy.

Great Poland: the long dawn of medieval trade and exchange

While the earliest ports of trade in western Pomerania show many features of an advanced monetary market economy, it is difficult to detect similar evidence in the central localities of the early Piast state of Poland. On the other hand, a significant concentration of silver hoards can be attested here for the tenth century (Fig. 5). Different factors are responsible for such a situation. Firstly – the oldest centres came into being almost 100 years later than the coastal trading ports. Secondly – even from the late tenth until the mid-eleventh century, when the most of them were already in function, it is hard to define them as early urban centres, first of all they were the central seats of the new ruling dynasty. Hence their urbanisation was a long process, starting, as some scholars believe, in the late eleventh and twelfth centuries.[29] Maybe for such a reason one of the main goals of the Piast rulers was to capture the older trade ports situated on the Baltic coast and to build new ones competitiion. This can be illustrated by the example of Gdansk and Truso in the eastern part of the Baltic coast area.[30]

An open question is to which extend the Arab dirham was considered to be a monetary unit or whether it primarily was a particularly attractive metal good, indicating the high status of its owners. The answer is most likely that across the vast Scandinavian-Balto-Slavic territories there was no uniform monetary system. In the principal ports of trade the monetary function of coins had probably been recognized, while on the periphery with its barter economy, non-metallic types of money were predominant. According to W. Łosiński,[31] the existence of a monetised economy seems likely only in territories connected with long-distance trade – such as the areas around the Baltic Sea.

27 Cf. Łosiński 1996, 166-167.
28 Suchodolski 2001, 94-95.
29 Cf. Łosiński 1996, 165.
30 Cf. Buko 2005.
31 Łosiński 1996, 172-175.

Fig. 6. Early medieval Silesian iron bowls (from different sites); used as a non-monetary means of payment

As for the economy of Great Poland – linked to the traditional economy of the Piast rulers, defined by a system of levy and highly specialized services – such a monetary function would have seemingly been useless, particularly at an earlier date.

Some scholars emphasise the immediate dependence between the principal routes (on rivers or overland) and the location of the first central sites of the Piast state. Gniezno, the first Polish capital, arose at the junction of several water routes including the River Warta, leading to other sites of importance for the Piast dynasty. The Warta River offered further suitable interregional connections within Polish territory. Moreover, it is possible to define this river as part of the principal route for the long-distance trade between the Baltic and the Black Sea. Maybe the necessity to keep this route under control was the reason for the location of Poznań – the second principal centre of the early Polish state. Its position facilitates a connection with the economically strong

Baltic zone and the vast territories in the basin of the Vistula and Oder rivers.[32] Due to the fact that in Poznań these routes intersected with those running towards Western Europe, the newly built centre was capable of fulfilling a political as well as many economic functions. Finally, Poznań became the counterpart of Gniezno.[33]

Trading routes through Mazovia and along the river Bug

On the eastern side of Great Poland, the vast expanse of the Mazovian region was crossed by the old Vistula-Bug river route – another important element of the long-distance transit way connecting the Baltic and Black Sea zones. Located alongside this route are three important strongholds: one in Brest, one in Mielnik and one in Drohiczyn (cf. Fig. 2). Each of them played an important role in the history of the Polish-Rus' borderlands and stimulated a network of early medieval settlements.[34] Along this route three important silver hoards containing Arabic coins of ninth-tenth century origin have been found.[35] The amount of such finds near Drohiczyn shows that already before the eleventh century – when this centre came into being – an important intersection of trading routes was located in this area. It is not impossible that another route was located near Drohiczyn – stretching from Lublin (in Little Poland) to the Sambian territories.[36] A similar presumption concerns Brest situated at the outlet of the Muchawiec to the river Bug, where local routes intersected with the long-distance ones. That is why Brest – like Drohiczyn – profited economically from its geographical position between the North-Slavic territories and the East.[37]

The Bug river transit route promoted the development of settlements not only in Eastern Mazovia, but also in eastern Little Poland, particularly around the large centres dating from tribal times situated in Lublin and Chełm. Long-distance trade could reasonably be expected as the explanation for the massive finds of coins there. Maybe, as W. Łosiński[38] believes, this trading route was activated around 880 – thus initiatiing a direct trading connection reaching from Kiev and along the Bug and Vistula rivers towards the Baltic Sea zone.

32 Kurnatowska/Kurnatowski 2001, 97.
33 Cf. Kurnatowska 2002a, 100.
34 Dunin-Wąsowicz 1981.
35 Cf. Kamiński 1953; Gupieniec/Kiersnowska/Kiersnowski 1965.
36 Tyszkiewicz 1974, 121-122.
37 Dunin-Wąsowicz 1981, 51.
38 Łosiński 1993, 27.

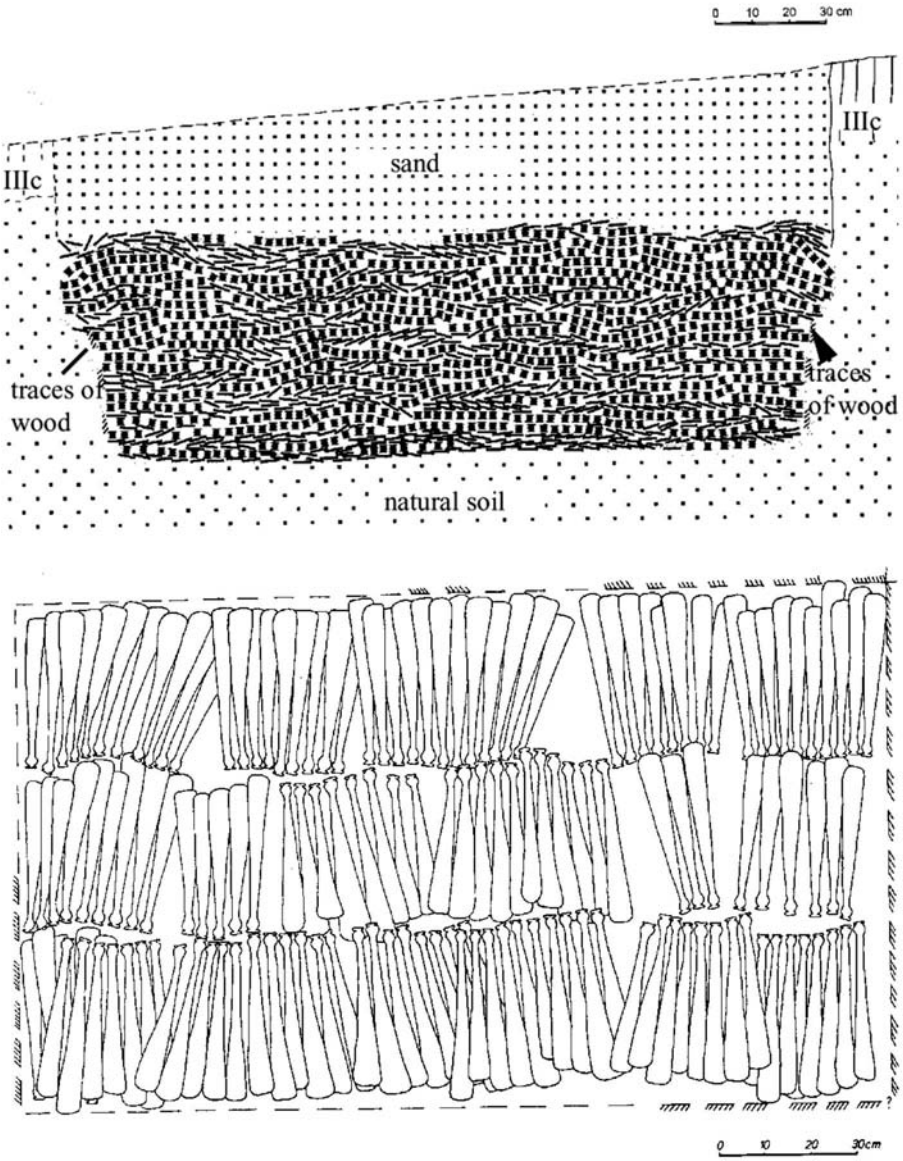

Fig. 7. Axe-shaped iron hryvna from Krakow, (13, Kanonicza Street): the biggest hoard (treasury) in Europe from the ninth century: above – stratigraphy of finds; below – the last layer of hryvna with pieces organised in clusters

Trans-European and regional routes: early trade in Southern Poland

Contrary to the regions discussed above, the political situation of Little Poland before the mid-tenth century was very complex. For some years there have been two different concepts concerning the position of Silesia and Little Poland on the geopolitical map of Central Europe. There are opinions stressing the direct relations to Great Moravia and the political dependencies of both regions on the Moravian principality, while others negate such a possibility. Looking at this problem through the perspective of archaeological finds, the hypothesis stressing the close relation of Silesia to the state of Great Moravian seems very convincing.[39] Here, the numerous finds of so-called axe-shaped *hryvna*, very common not only in the territories of Moravia and Slovakia, but also in Little Poland should be pointed out (Fig. 6). The oldest medieval coin hoards, dated in Southern Poland to the ninth century, are unknown from Great Poland, the oldest monetary hoards dating from the period of 930-990.[40] Another peculiarity distinguishing the southern territories from others are the relatively abundant finds associated with nomadic peoples (e.g. Magyars, Khazars, Avars), while in other regions further to the north, such finds are absent.[41]

Cracow, situated on the trans-European route leading from Prague and Regensburg towards Kiev and Byzantium played a special role in the development of early trade. Around Cracow the soil is suitable for agriculture (loess), also there exists an abundance of natural salt resources – the exploitation of which already beginning in Wieliczka in the early Neolithic. Moreover, there are rich reserves of raw materials for the production of iron, lead and silver located near Olkusz.[42] Since the Middle Ages this area also provided abundant amounts of good quality stone for monumental buildings. All these factors favoured the division of labour inside the local societies mentioned in the written sources as *Vistulans* thereby stimulating early trade.[43] Cracow, like the centres situated on the Baltic coast, is among the few towns in the whole Polish territory, which grew continuously since the ninth century.[44] In Cracow there exist the unique monumental barrows of Krakus and Wanda – recalling a similar idea common to both the Kievan Rus' (Cernyhov, Gnezdovo) and Scandinavia (Gammle Uppsala, Jelling). Their presence points to the beginnings of the local pre-state dynasty of the ninth century.[45] In the life of St. Methodius there is an episode mentioning an unknown "prince" who, according to the chronicler was "powerful" and, being pagan, was a threat to the

39 Wachowski 1997, 44-60.
40 *Idem* 2001, 330.
41 Cf. Poleski 1997.
42 Cf. Rozmus 2004.
43 Cf. Labuda 1988, 125-151.
44 See Radwański 1975.
45 Słupecki 1998; Buko 2004.

Fig. 8. Some ornaments from the hoard from Zawada Lanckorońska (near Krakow): Cultural areas: Great Moravian culture in its late phase, Varangian milieu (Kiev-Gnezdovo), Old Magyar culture. Dating: ornaments date from between the mid-ninth and the tenth century; the hoard was hidden: ca. mid-tenth century. Function of ornaments: property of a woman? Material evidence of the presence of a merchant in Zawada, travelling the route Kiev-Cracow-Prague?

Christians living in Great Moravia. Many scholars believe that this episode relates to the pre-state organisation of the *Vistulans*, including their central site at Cracow.[46]

From the Cracow area there are many archaeological finds demonstrating direct contacts with the Great Moravian area, moreover, even with the milieus of the Avars and Magyars. The ninth-century development of local trade and exchange is attested by findings of dirhams and of non-coin money, such as silver scrap and, above all, the hoard of axe-shaped *hryvna* (4212 pieces, weight ca 4000 kg), found at Kanonicza Street 13 (below Wawel Hill), dating to the beginning of the same century.[47] Their arrangement in clusters from a few to dozens of items could indicate, as some scholars believe that they were delivered to the local treasuries as a regular tribute or donation.[48] If so, this discovery (Fig. 7), the largest and best studied in Europe is the archaeological evidence of the first treasury system on Polish territory dependent on local political power. All

46 Cf. Radwański 2000.
47 Zaitz 1981.
48 Radwański 2000, 548.

Fig. 9. The Byzantine gem (made out of heliotrope) from Przemyśl (eighth century? early eleventh century?): archaeological evidence of exchange between Polish territories and Byzantium

of these observations, including the famous hoard from Zawada Lanckorońska (Fig. 8) make it possible to define the special role of Cracow for the early trade and exchange in this part of Europe[49].

In Southern Poland there is one more region which played a particular role in the area of early trade and exchange before the tenth century – the Przemyśl area. All of the main routes of local, as well as of regional and supra-regional importance passed through the Przemyśl Gate, connecting the zone around the Baltic with the Black Sea. The importance of this area goes back to the La Tène age – demonstrated by many settlements and numerous finds (including coins) from Celtic and Roman periods, known from Przemyśl itself and its surrounding areas.

At the beginning of the early Middle Ages one can observe the continuity of long-distance exchange confirmed by finds of coins – beginning with the times of Justinian the Great, and above all a hoard of dirhams (ca. 700 coins) from the ninth-tenth centuries.[50] Some other finds – such as a Byzantine gem and a concentration of strongholds dated to the ninth-tenth centuries – demonstrate the specific role of Przemyśl in the time before the Polish state came into being (Fig. 9). An important factor for its prosperity were the local salt resources in the neighbourhood of the town, which remained under control of this centre. All of this formed a solid background for the formation process of the political organisation of the Lendzane – mentioned in the ninth century by written sources.[51] A monumental barrow at Przemyśl – linked with the legendary founder of the town – is redolent of similar monuments known from Cracow.

The special importance of the Przemyśl Gate is confirmed by the only cemetery on Polish soil of Magyar warriors from the ninth/tenth-mid tenth centuries. Apart from male skeletons there are also some of females and children and besides human burials

49 Cf. Zoll-Adamikowa/Dekówna/Nosek 1999.
50 Kunysz 1981, 66.
51 Labuda 1988, 201-211.

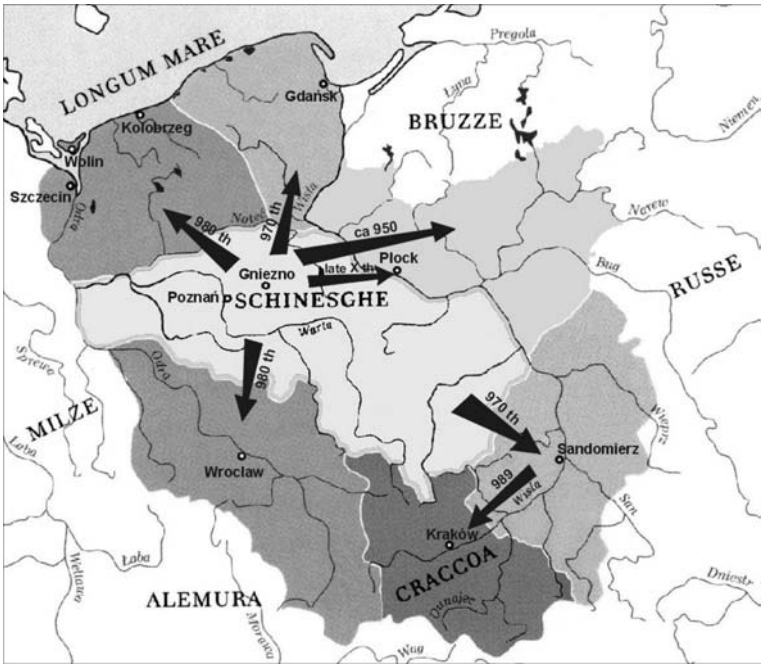

Fig. 10. Territorial consolidation and development of Genzdum *civitas* before the end of the tenth century

also horses were interred. For several years the question has been discussed why a small community of Hungarians settled in this place, with many opinions to explain this interesting phenomenon. Some authors believe that the Magyars were protecting the Przemyśl Gate against Petchenegs, while others emphasise their role in keeping the important trading routes under control and perhaps also the local ethnic groups called Lendzane.[52]

Final remarks

The system of trade and exchange on Polish territory continued to be stable until the mid-tenth century, i.e. until the definitive formation of the Polish state. It is interesting to follow what happened with it in the time, when, after 966, the Piast ruling dynasty rose to power. The 960s were a period of the formation process and territorial consolidation of the *Genzdum civitas* (the first denomination of Poland known from the written sources of the tenth century). For the 970s, archaeology has produced evidence concerning the eastern borderland in Little Poland and the eastern part of Pomerania (Fig. 10). During

52 Koperski 2003, 373.

this decade, the principal urban centres of the Polish, e.g. Sandomierz, Lublin, Przemyśl (Little Poland) and Gdańsk (on the eastern Baltic Coast) were rebuilt or newly built by the new rulers. As a consequence, the Piast's expansion embraced the whole route along the Vistula-Bug River and the Przemyśl Gate.

At the beginning of the eleventh century, Boleslaw the Brave built a new *palatium* and a royal chapel in Przemyśl, near the frontier with the Kiev Rus'. Such a policy might have enabled him to keep the most important trading and exchange areas from the north to the southeast under control. At the same time, Gdańsk was founded (or rebuilt) by the Piast rulers, acting as a new trading centre of international significance on the Baltic Coast and possibly having served to eliminate the neighbouring 'Danish' Truso; its definite end came in the middle of the eleventh century.

For the next decade there is much archaeological data and many written sources relating to Piast military activities in Western Pomerania and Silesia. According to the dendrochronological data, the mid 980s were a time of the rise of the principal urban centres in the western part of Poland. Some of them were captured and rebuilt by Piast rulers, first of all the prospering ports of trade like Kołobrzeg, Wolin or Szczecin, with others like Wrocław and Opole in Silesia, coming into being. The far-reaching political activities over enormous territories and the large investment in urban development attest an impressive military and also economic potential of the new ruling dynasty. Before the end of the 980s this dynasty finally incorporated Mazovia into the Polish state, though in the policy of the Piasts the province was to play the role of a territory of secondary importance. The last object of the Piast strategy was Cracow, which they took from Czech hands.[53] Contrary to the situation in eastern Little Poland, this operation, probably carried out around 989, was relatively peaceful; there is no archaeological evidence of any catastrophes affecting the older strongholds in the surrounding areas. Moreover, the older centres (including Cracow) were still in function after their seizing by the Piasts. Possibly some or even all of them were economically very prosperous, thus also providing revenue to the new rulers.[54]

Already before the end of the tenth century a new economic system had been introduced across the whole Polish territory. All of the historical regions had been divided into provinces and managed by the prince's officials with the title of *comes*. As a consequence, regional and interregional exchange declined and a system of centralised economy, based on highly specialised production practiced in so-called service-villages, forged a new pattern of trade and exchange.[55] Only some centres in Western Pomerania – such as the older ports of trade incorporated into the Polish state – tried to defend their economic, political and ideological independence until the middle of the twelfth century. But in the new politically organised and Christianised Europe, such attempts were inevitably doomed to fail.

53 Cf. Buko 2005.
54 Cf. *idem* 2002.
55 Cf. Modzelewski 2000.

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Counted and weighed silver: the fragmentation of coins in early medieval East Central Europe

Sebastian Brather

The background

Silver was apparently a major means of exchange from the ninth to the eleventh century. Several hundred hoards were found around the Baltic Sea and in Eastern Europe.[1] We know of more than 150,000 dirhams (Arab silver coins) of the ninth and tenth centuries from them.[2] The number of West European coins (mostly German and English) of the tenth and eleventh centuries is even greater.[3] By means of these coins silver was "imported" to East, North and East Central Europe. Most of the silver jewellery, which is preserved in hoards and graves of the Viking age,[4] was made from this imported silver.[5]

The silver economy started in the ninth century.[6] A basic precondition for it was the establishment of "ports of trade" or *emporia* along the coasts of the Baltic Sea. They began earlier than modern archaeologists thought several decades ago: dendrochronological data from Haithabu (?), Groß Strömkendorf and Menzlin indicate the existence of settlements as early as the first half or the middle of the eighth century.[7] During the ninth century the influx of a great deal of eastern and some western silver reached only the regions near the sea coasts. In the tenth century, the extent and intensity of circulation and exchange increased rapidly,[8] and they formed a basis for economic development and political power in Denmark, Sweden and Poland.[9]

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1 Hårdh 1976, 1996; Steuer 1987; Brather 1997; Metcalf 1997; Kilger 2000.
2 Brather 1997, 115-116.
3 Wiechmann 1996, 83, 89.
4 Eilbracht 1999.
5 Steuer/Stern/Goldenberg 2002, 142 fig. 6.
6 Łosiński 1988. For a broader perspective, see McCormick 2001, 343-384.
7 Brather 2004, 44-45.
8 Łosiński 1991; *idem* 1992; *idem* 1993.
9 Brather 1999.

As a means of payment, the respective amount of silver had to be determined for every transaction. Small numbers of coins could be counted: while no one in North and East Central Europe could read Arab letters, the value of a standardised coin like the dirham was probably well-known. Greater numbers of coins as well as different pieces of silver – coin fragments, jewellery, and ingots – needed to be weighed if one wanted to know their value in grams of silver. Was there a major change from counting Arab coins in the ninth century to weighing silver in the tenth, and finally, once again to counting coins in the eleventh century?[10]

The hacksilver period: the tenth and eleventh centuries

From the late ninth to the early eleventh century, the hoards mostly contain both coins and jewellery. This clearly indicates that silver itself was the main thing – the standard of exchange. During the eleventh century, the proportion of coins increased rapidly (Fig. 1), reaching nearly 100 % in the mid-eleventh century – indicating a transition to a coin-based monetary system. Regional differences in time can be observed. For instance, the influx of coins was probably low in South Sweden (Skåne),[11] but in hoards from Gotland coins were always predominant, thus showing a specific situation on this island.

Coins and jewellery were often cut or broken to smaller pieces. The fragmentation of coins and of jewellery must have started at the same time – in Schleswig-Holstein around 900[12] just as in South Sweden,[13] but on Gotland only in the mid-tenth century.[14] If one looks at the finds in detail it becomes apparent that after 850 at least some finds contain fragmented coins and jewellery (Fig. 2). The fragmentation reached its height in the late tenth century, as a diagram for Schleswig-Holstein shows, while the peak for South Sweden[15] and Gotland[16] was in the first half of the eleventh century; the so-called Islamic silver crisis (the sudden end of the influx of Arab coins to Europe) is thought to be the main reason for the intense cutting.[17] Jewellery was cut several decades longer than coins, but this could be due to the smaller normal weight of the coins, which was

10 Steuer/Stern/Goldenberg 2002, 136 fig. 2.
11 Hårdh 1976, 131-132.
12 Wiechmann 1996, 180. Before 825 there is no fragmentation (*ibid.*, 182).
13 *Ibid.*, 182; Hårdh 1976, 135. Despite two finds there are no older hoards (Hårdh 1976, 25, 40) which makes the beginning of fragmentation unclear; it could have started before 900.
14 Lundström 1973, 21-25.
15 Hårdh 1976, 134-135.
16 Lundström 1973, 32.
17 Wiechmann 1986, 182.

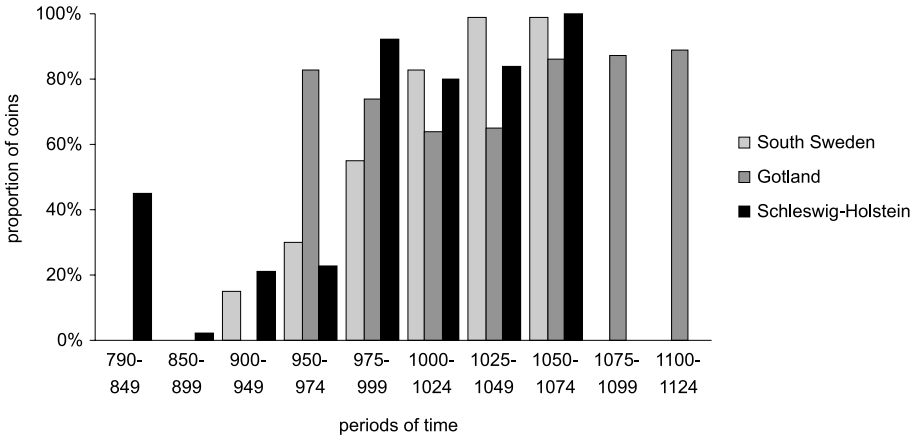

Fig. 1. Proportion of coins in hoards from South Sweden, Gotland and Schleswig-Holstein. The graph shows a large number of jewellery during the tenth century. After the year 1000, mostly coins were hoarded

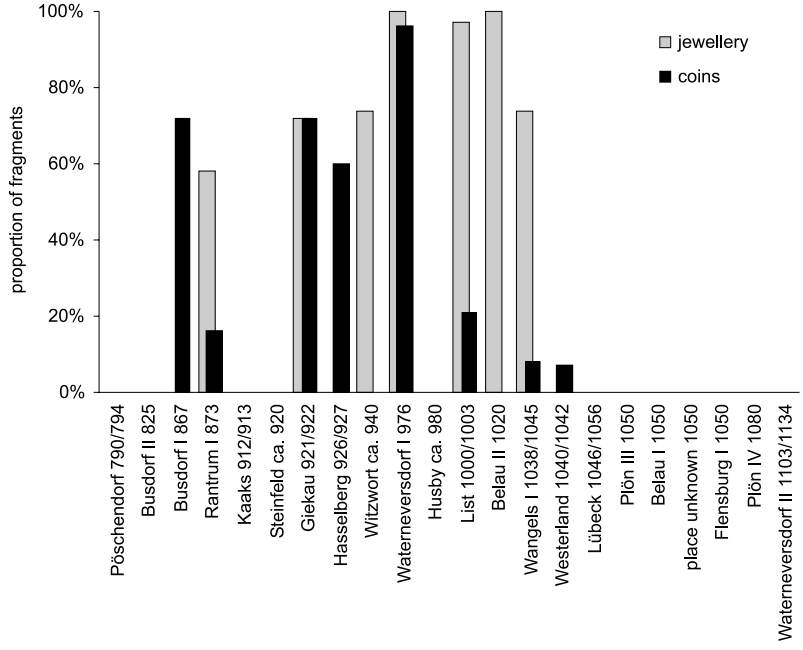

Fig. 2. Proportion of fragmented coins and jewellery in hoards from Schleswig-Holstein. Fragmentation started in the last third of the ninth century and had its peak during the tenth century. In the first half of the eleventh century, only jewellery was cut while coins remained mostly uncut. No column for a hoard means there were no fragments in it

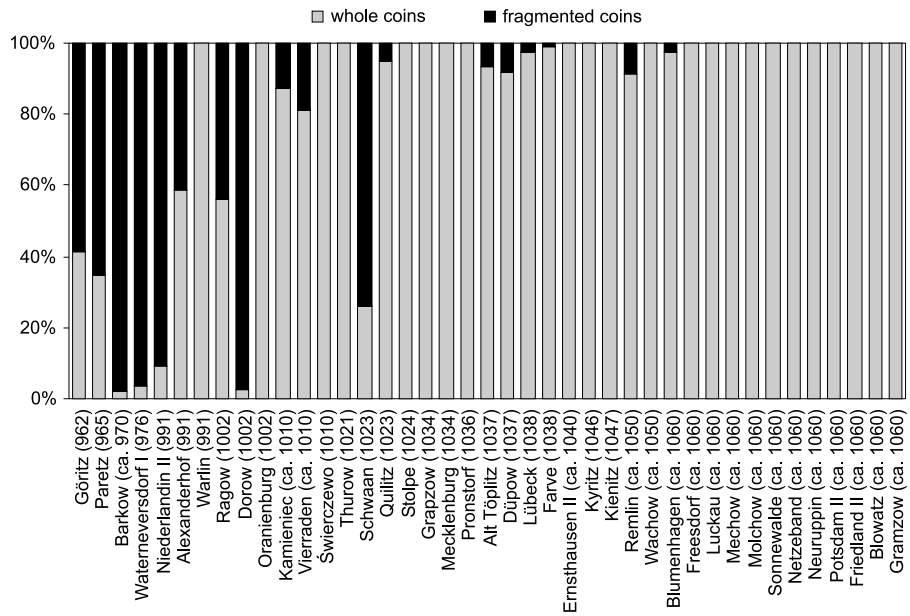

Fig. 3. Proportion of fragmented and non-fragmented coins in hoards from the Elbe regions, 962 to 1060. Most of the fragments are found during the second half of the tenth century, and after 1000 a tendency towards whole coins becomes apparent. But even in the late eleventh century a few hoards

about 1.2 g in the eleventh century. Probably it was more important to cut the heavier pieces of jewellery than the lightweight coins, and the jewellery fragments mostly had the same weight as the coins. A listing of bigger hoards south of the Baltic Sea demonstrates that in some cases in the tenth century nearly all of the coins were cut or broken (Fig. 3). At the same time there were other hoards without fragments – like the find from Klukowicze (after 901/910?).[18] In the following century most of the coins remained uncut, but there are some exceptions to the rule.[19] The ending of cutting apparently corresponds with the establishment of local minting in Denmark, Sweden and Poland.[20]

The dirhams in particular with their exact date allow us to ask if there is any connection between the date of minting and the cutting. For West European coins, it is sometimes very problematic to establish a solid chronology. But the dirhams represent the most fragmented coins and therefore are a reliable sample. The analysis shows no

18 See the corpora that have a sufficient number of tenth-century hoards without fragments: Kiersnowska/Kiersnowski 1959; Kiersnowski 1964; Gupieniec/Kiersnowska/Kiersnowski 1965; Haisig/Kiersnowski/Reyman 1966.

19 The finds from Schwaan, Prenzlau I and Stolpe II with more than 50 % fragmented coins Kilger 2000, no. 6.05, 2.78, 6.60).

20 Suchodolski 1971.

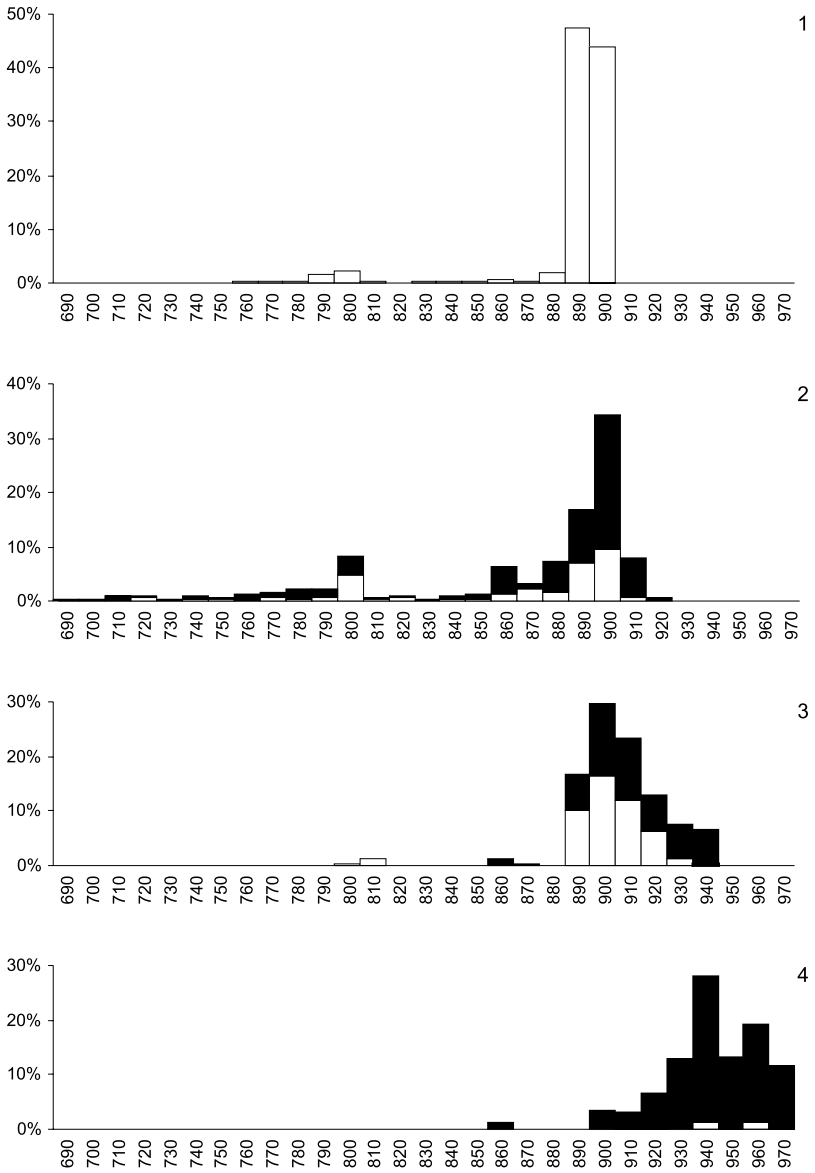

Fig. 4. Four coin hoards of the tenth century, composition per decade and proportion of fragmentation (in black; only datable fragments can be shown). 1. Klukowicze (after 901/910); 2. Giekau (after 921/922); 3. Łabędzie II (after 929/942); 4. Maurzyce-Ruszków (after 971/976). During the tenth century, the proportion of fragmented coins (the cut pieces of jewellery in the same hoards are not shown here) tends to be much higher than during the previous century, but the Klukowicze hoard is not the only exception

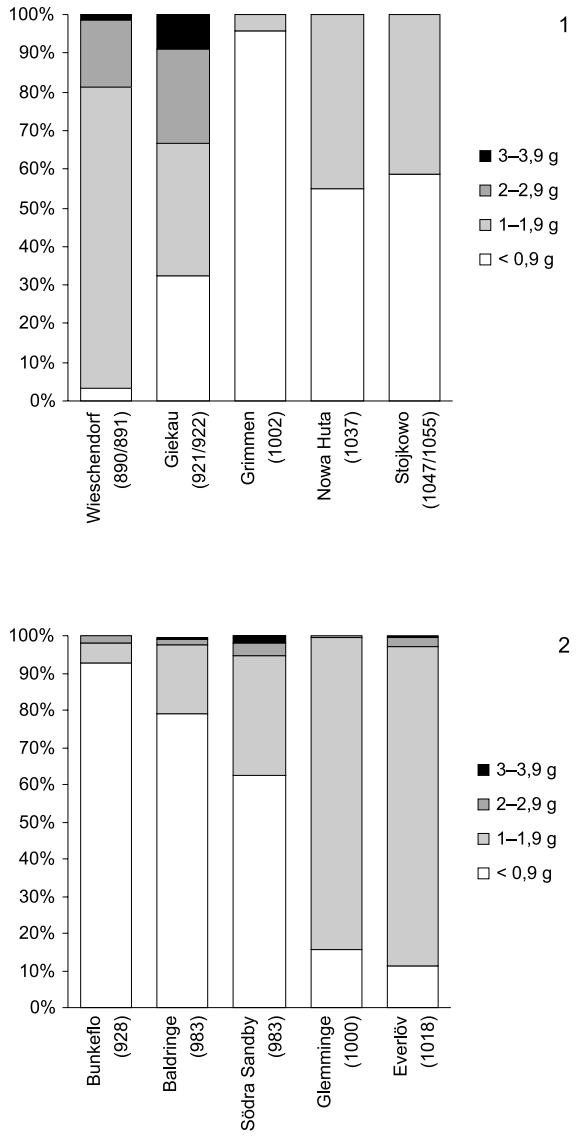

Fig. 5. Proportions of different fragmentation of coins in hoards from West Slavonic areas (1) and from South Sweden (2). The fragments of the Swedish finds show a tendency to the weight of whole coins (slightly over 1 g) as early as in the years around 1000, while this development took place half a century later in the areas south of the Baltic Sea. In previous times (eighth/ninth centuries), roughly the same weight was equivalent to half a dirham, but some hoards represent exceptions

direct relation between the date of minting and fragmentation (Fig. 4[21]), although older coins seem to have been cut more frequently than more recent ones, and they have more nicks, notches and pecks.[22] But diverging from this general trend, the hoards from Giekau and Łabędzie II contain coins that were nearly completely cut from the last decade prior to their supposed deposition.

The weight of the fragments differed of course, and specific patterns appear over time. Small fragments below 1 g peaked in the tenth century. After AD 1000 most coins had a weight of about 1 g or a little bit more, and therefore the graph is misleading in some way for the more recent phase (Fig. 5.1). The dirhams from the Wieschendorf and Giekau hoards were cut in half and mostly quarter coins, and they mark the beginning of an intense phase of fragmentation. The weight of these fragments corresponds in some way with that of West European denars and the "Hedeby half bracteates", which is perhaps not just a coincidence.[23] Some South Swedish hoards suggest a strong tendency to whole coins – now West European denars instead of Arab dirhams – in the late tenth and early eleventh centuries (Fig. 5.2). The fragments of jewellery indicate a similar development, leading to a weight equivalent to whole coins (Fig. 6).

Previously, in the tenth century, fragmentation produced smaller pieces. Did the weight of these pieces correspond to that of whole coins or to that of weights used? Both possibilities may have played a role,[24] and it is hard to decide between the two explanations. On the one hand, the fragments have no precise weight but show some accumulations, and therefore precise measure cannot be calculated on this basis. On the other hand, the weight measures probably did not differ very much from the weight of the coins.[25] Heiko Steuer suggests a basis of 4.25 g, which is approximately the weight of the Arab (golden) dinar, which further goes back to the Byzantine solidus.[26] Half a dirham is roughly as heavy as a West European denar. The lightest weights known so far have 0.355 g, which is about an eighth of a dirham.[27] Probably there were different regional weight systems around the Baltic Sea,[28] and this makes the picture more complicated.

21 Differences to graphs already published by the author are due to a different way of counting the decades. In this graph the decades are counted from ...0 to ...9.
22 Wiechmann 1996, 165.
23 *Ibid.*, 175.
24 *Ibid.*, 170-182.
25 Hårdh 1976, 141.
26 Steuer 1997, 283.
27 *Idem* 1987, 463.
28 Hårdh 1996; Metcalf 1997; Kilger 2000. Gustin emphasises "the king's interest and intervention in a weight-based payment system" (Gustin 1997, 176).

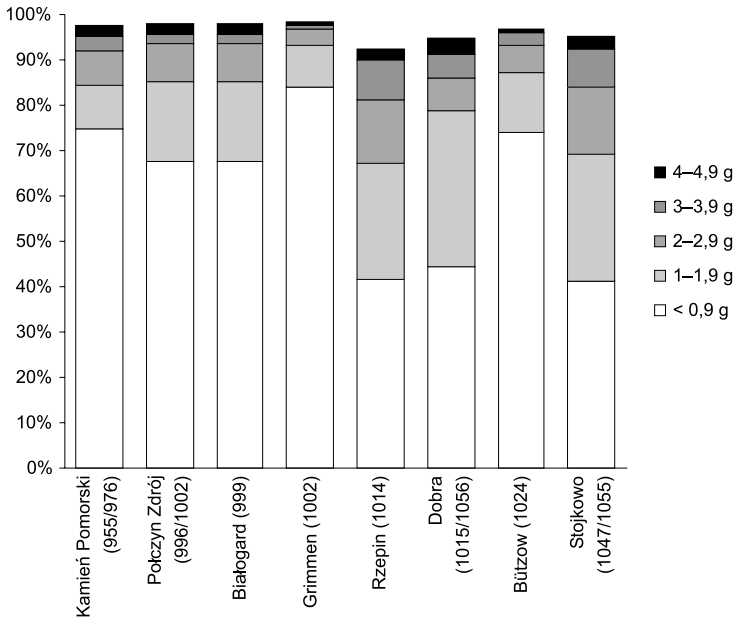

Fig. 6. Proportions of different fragmentation of jewellery in hoards from West Slavonic areas. The weights show a trend to that of whole coins (slightly over 1 g). Fragments of 5 g and heavier are omitted here

The proportion of fragments seems to be an indicator of intensive circulation, a frequent exchange and perhaps the existence of a local market.[29] But most likely the lack of new coins could lead – in some regions and during specific time spans – to an intense cutting as well. In this case fragmentation would have been due much more to a crisis than to a developed and prospering economy. Thus several reasons could result in coin fragmentation, and this makes the reconstruction of patterns of fragmentation a task requiring great skill.

Weights and balances were used to weigh the silver. They came into widespread use in the late ninth century (Fig. 7). Collapsible balances and small cubo-octahedral bronze weights (Steuer's type A, less than 5 g) could measure with an accuracy of less than 1 % or up to 0.1 g.[30] The bigger spherical bronze-covered iron weights with flattened poles (Steuer's type B, more than 4 g up to 100 g) served for larger sums of money, and perhaps "weighing primarily was used for larger transactions"[31]. Different weight systems or the lack of standardised weights made it necessary that both partners of a transaction used their own weights (which could be referred to as "counter-weigh-

29 Kiersnowski 1956, 250; Tabaczyński 1958, 48-54; Wiechmann 1996, 171.
30 Steuer 1987, 463; Sperber 1988; *idem* 1996, 24, 65.
31 Gustin 1998, 82.

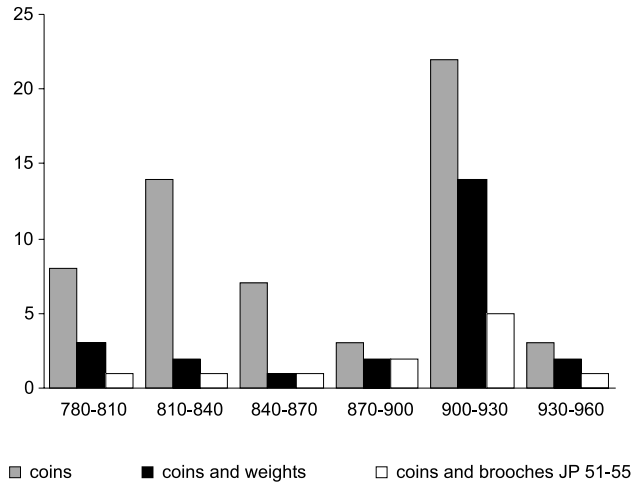

Fig. 7. Birka, graves with Islamic weights, brooches JP 51-55, and dirhams. The chronology of the fibulae, belonging to the late ninth and the tenth century, suggests an arrival of weights from about 890 on

ing") in order to get the right amount of silver.[32] The presence of weights and balances, the high rate of coin fragmentation and the frequent occurrence of jewellery in the hoards are interpreted as strong arguments that the coins were not counted but weighed during the tenth and early eleventh centuries. The fragments were often too small to be counted, because no one would be able to say how many of them had to be added to get the weight of a whole dirham. And there was no political power, which could guarantee the value of coins; the first local issues were distributed around AD 1000, primarily serving to enhance the king's political prestige.

But what can we expect for the earlier period, the first two thirds of the ninth century? There were only a few weights and balances, a few pieces of jewellery or some ingots in the hoards, and only a few fragments. Does this mean that dirhams were counted?[33]

The beginnings: 800-870

In the first two thirds of the ninth century the situation differed from the later hacksilver period. Only during the last decades of that century standard weights and collapsible balances came into use around the Baltic Sea.[34] They must be taken with the dirhams

32 Steuer 1987, 499-500.
33 Steuer/Stern/Goldenberg 2002, 136 fig. 2.
34 Steuer 1987, 460, 487 fig. 9-10; *idem* 1997, 229 fig. 165, 320 fig. 232.

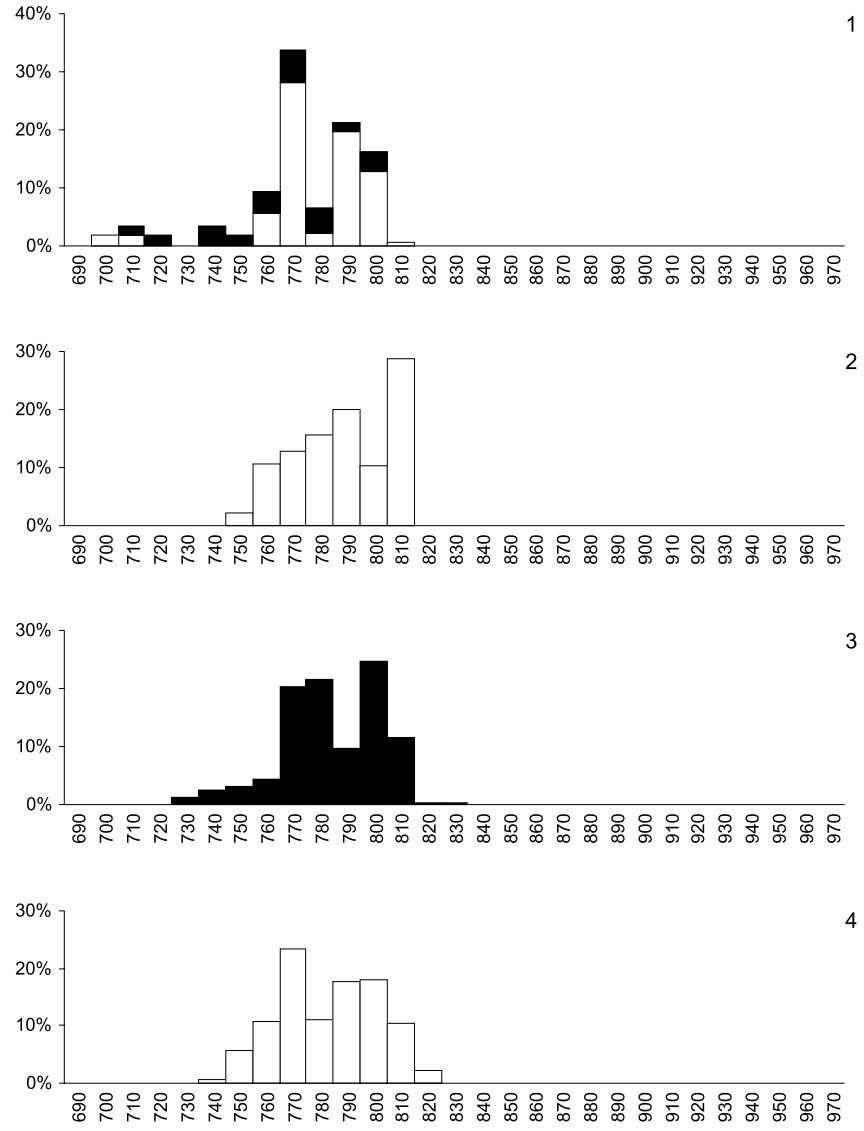

Fig. 8. Four coin hoards of the early ninth century, composition per decade and proportion of fragmentation (in black; only datable fragments are shown). 1. Prerow (after 803/814); 2. Braniewo (after 816/817); 3. Mokajmy-Sójki (after 817/818); 4. Ramsowo (after 828/829). The depots from Braniewo and Ramsowo have only whole dirhams, while the Prerow hoard has some fragments, and surprisingly the find from Mokajmy-Sójki consists of fragments only

from the Middle East.[35] Some other kinds of weights – namely, lead weights – are found in the Baltic,[36] but they are, as often suggested, perhaps primarily used by craftsmen to produce special alloys. Some balances of older western types, which could not be folded up, still remained in use in the early ninth century.[37] When the silver and especially the coins could not be weighed, then they had to be counted. Transactions could only be made by this method.[38]

In this case one would expect whole and complete coins only in the hoards, and the hoards from Braniewo and Ramsowo are good examples (Fig. 8). But a sufficient number of early ninth century hoards contain fragmented dirhams. The Prerow hoard is a very early example, and its proportion of fragmented and whole coins is similar to that of other hoards sixty to eighty years later. Nevertheless one has to bear in mind that the diagrams only show the datable dirhams. Many small fragments cannot be dated[39] and are therefore omitted here. The Pinnow hoard, for instance, includes several hundreds of fragments (Fig. 9).[40] In the end there are more fragmented dirhams than shown here.

In general, however, the percentage of fragmented coins is much smaller in the ninth than in the tenth century. This is not surprising, because the circulation was much more intense after 900 as the much higher number of hoards from this time suggests. But the main evidence is the weights and balances themselves. They apparently were used for weighing the silver, and therefore an intense cutting seems to be a logical consequence. Otherwise, if there were only some irregular weights in the early ninth century, how could one explain the regular fragmentation, even if it concerns only a small number of dirhams?

One explanation could be that the cutting and breaking of dirhams was not carried out in the Baltic regions. If this is the case, previously fragmented dirhams must have been brought from the Middle East into Europe, or the fragmentation occurred during circulation in Eastern Europe (modern Ukraine and Russia).[41] This is not unlikely, because fragmentation is known from Near Eastern hoards,[42] and the large number of Islamic coin weights demonstrates that coins were weighed even in the Arab economy.[43]

35 *Idem* 1987, 460, 474-479.
36 Sometimes these other weights dominated, as the many finds from Birka and Uppåkra indicate (Gustin 2004, 89-96).
37 Six of them are known from Haithabu; Steuer 1987, 459 note 192.
38 Steuer/Stern/Goldenberg 2002, 136 fig. 2.
39 The same is true for the tenth century. For instance the many hundred fragments in the Opalenie hoard cannot be analysed chronologically (Kiersnowska/Kiersnowski 1959, 78).
40 Kiersnowska/Kiersnowski 1959, 82; Nützel 1890, 276.
41 Metcalf 1997, 333.
42 Ilisch 1990.
43 Bates 1981.

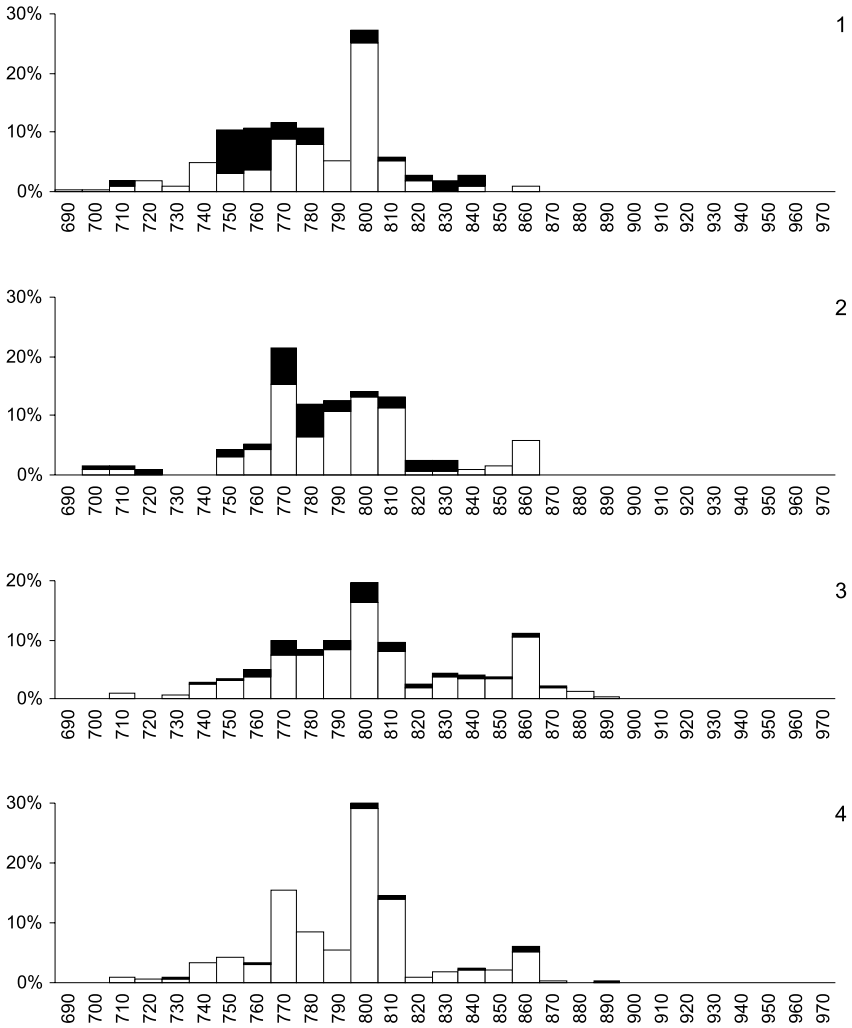

Fig. 9. Four coin hoards of the late ninth century, composition by decade and proportion of fragmentation (in black; only datable fragments can be shown). 1. Pinnow (after 862/864); 2. Karnice (after 867/868); 3. Czechów (after 882/883); 4. Drohiczyn II (after 893/894). All these hoards of the second half of the ninth century have a small but steady proportion of fragmented dirhams, but at the same time there are other hoards without fragments

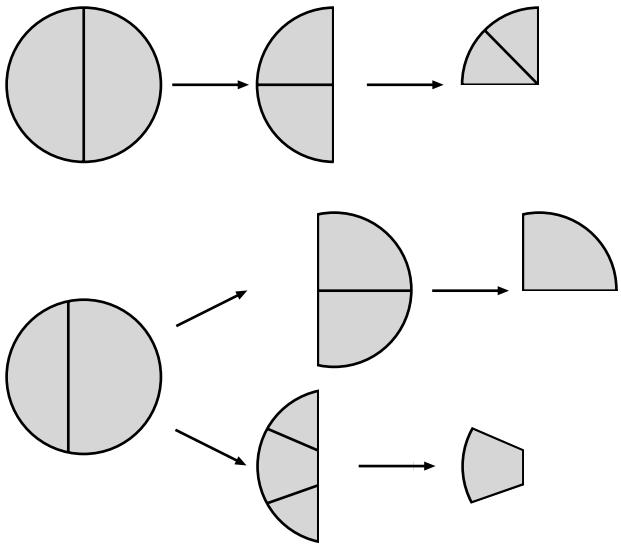

Fig. 10. Divisions of dirham, divided in half or in thirds

The chronology of the fragmented dirhams is not a good basis to decide where the fragmentation took place; the diagrams (Figs. 8 and 9) demonstrate that all coins were cut roughly in the same percentage with just a slight tendency to a greater extent with older dirhams because they circulated for a longer time. Probably there must have been some regular patterns in the "imported" fragments, which made it possible to estimate their weight and value. This idea leads to a second possible interpretation. Regular fragmentation could have been made even within Europe, and then weights and balances would not have been necessary. One could imagine that half a dirham, a quarter, an eighth, and perhaps a sixteenth (0.18 g) of a dirham could be identified, and the same is true for a division in thirds (Fig. 10). Interestingly, we have even found fragments with a size of about two-thirds of a coin (Fig. 11.2).[44]

One should not overestimate the accuracy of such a "regular" fragmentation,[45] but perhaps it was exact enough under the given economic circumstances. Even whole dirhams had no perfect weight. A dirham should have weighed nearly 3 g, but – as an arbitrary example – the dirhams of the Klukowicze hoard weigh between 2.5 g and 3.5 g (Fig. 11.3), which is no more accurate than any halving could be. The hoard from Giekau belonging to the early tenth century contains a significant number of quarter

44 Sperber 1996, 110 suggests that – besides the dirham weight – the gold weight of about 4.26 g could have been the basis for the cutting.

45 "The boundary between regular and irregular fractions is somewhat subjective" (Metcalf 1997, 303).

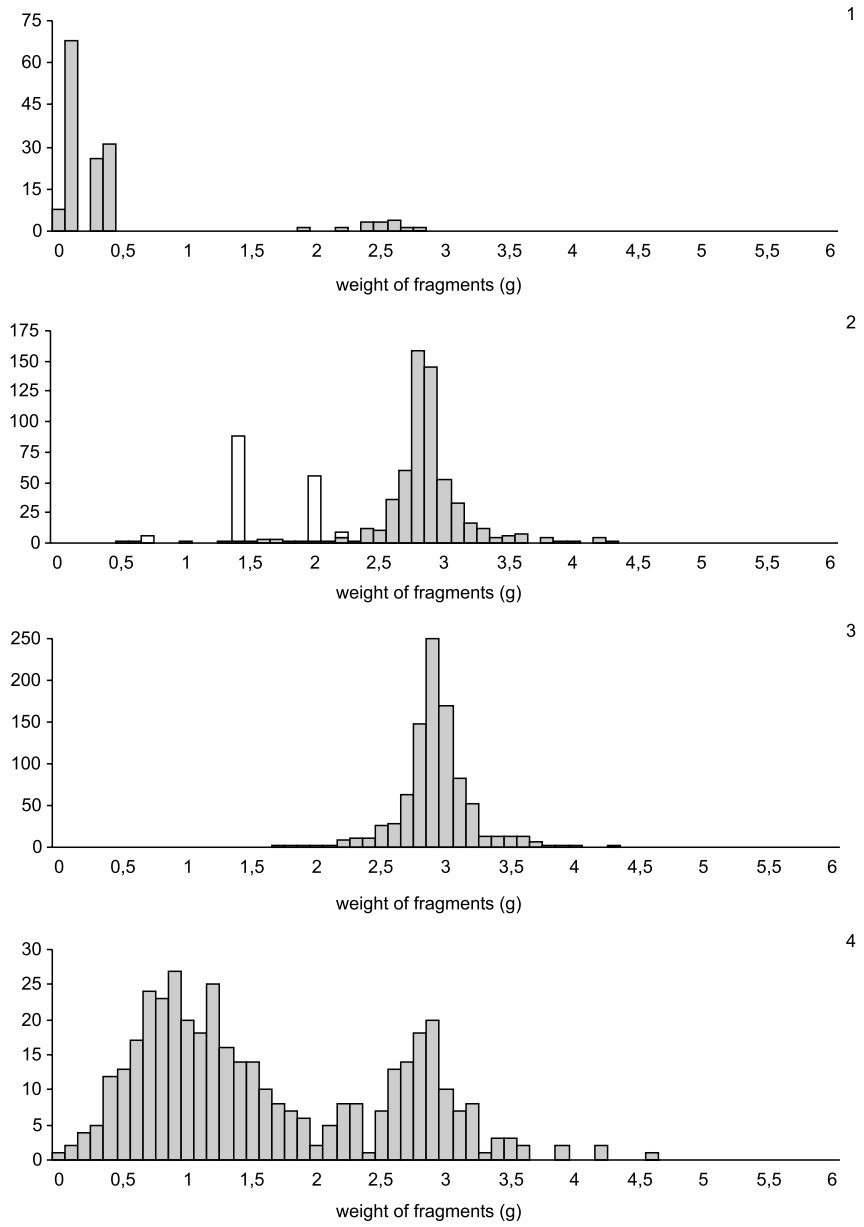

Fig. 11. Weights of coins and their fragments. The dirhams from Janów Pomorski (1) are highly fragmented, mostly weighing less than half a gram. For the hoard from Czechów (2), dated to 882/883, mainly the weights of whole dirhams are published; for the fragments their proportion is given schematically (white columns). The hoard from Klukowicze (3), dated to 901/910, has – except from a few smaller pieces – only whole dirhams, which have a weight between 2.5 and 3.5 g normally. The dirhams in the Giekau hoard (4), dated to 921/922, were mostly cut, and most of the fragments weigh about 0.7 g, i.e. a quarter of a dirham

dirhams (of about 0.75 g), while half of a dirham is not a common weight (Fig. 11.4) or usually cut further. Besides this, there are many probable "irregular" fractions we do not understand.[46] Because only a few hoards are published in such detail, it is impossible to get an overview to what extent there are regular fragments in the ninth-century hoards. Incidentally, some "irregular" weights are in fact counterfeit dirhams as we see in the nine coins from Haithabu which have only 2.3 g of tin and lead instead of nearly 3 g of silver.[47]

A basic methodological question concerns the reliability of chronology. 1: Although the hoards are dated by the most recent coin(s) – and although pieces of jewellery could sometimes give a more recent date – it could have taken a specific period of time until the silver was collected and buried. In these cases the coins (e.g. of the ninth century) would have been used longer, and perhaps measured by tenth-century weights and balances. But the larger number of ninth-century hoards and stratigraphical observations from the emporia make such a chronological difference unlikely. 2: The chronology of weights and balances depends on combinations with dirhams. Because of a deficiency of minting in the Near East only some mid-ninth-century dirhams reached Europe,[48] and this fact makes the dating of the earliest weights and balances somewhat uncertain. It may have been one or more decades earlier than 880/890, as Steuer suggests,[49] but the arrival of these instruments could probably not have taken place before 860/870.

A special situation could have existed in the south-east Baltic. The excavations in Janów Pomorski, probably Truso (near Elbląg), brought to light 270 dirhams and four West European coins, all minted before 850;[50] 15 of the analysed eastern coins are complete, 195 fragmented (Fig. 11.1).[51] This is a very high proportion of coins from an early ninth-century find.[52] Yet some of the whole coins have a hole.[53] Probably they were worn as pendants, thus indicating a date perhaps much later than the minting. A hoard some 10 km away shows the same composition: all dirhams in the Mokajmy-Sójki find, with a most recent coin from 817/818, are cut or broken (Fig. 8), and most of them are smaller than half a dirham.[54] In Truso half and quarter dirhams and even much

46 Furthermore the effect of corrosion has to be examined.
47 Steuer/Stern/Goldenberg 2002, 155-157.
48 Brather 1997, 89 fig. 3; Noonan 1986.
49 Steuer 1987, 460, 462, 487, fig. 9-10; *idem* 1997, 229 fig. 165, 320 fig. 232.
50 Czapkiewicz/Jagodziński/Kmietowicz 1988; Bartczak/Jagodziński/Suchodolski 2004; Brather 2005 (in print). The dirhams from Birka and Kaupang follow the same pattern (Kyhlberg 1973; Metcalf 1997, 320, 329; Gustin 1998, 75, 79-80).
51 Bartczak/Jagodziński/Suchodolski 2004, 46.
52 Perhaps modern agriculture has had some influence on the fragmentation, while the plough destroyed the archaeological features.
53 Mainly the West European and the very old Sassanian coins (Bartczak/Jagodziński/Suchodolski 2004, 29 fig. 3. 23, 33 fig. 4, 34 fig. 5, 36 fig. 6, 38 fig. 8).
54 Kiersnowska/Kiersnowski 1959, 70.

smaller fragments appear.[55] Interestingly, no hoards of the tenth century are known from the region, and probably there was no influx of Arab silver after 900 between the rivers Vistula and Neman. But from Truso about 300 weights and some balances were uncovered during modern excavations,[56] and they mainly belong to the tenth century along with other "imports" showing ongoing trade connections. Because the archaeological features are badly damaged, if not destroyed, one cannot assess if coins and weights belong to the same period, or in other words, if the old coins circulated even in the tenth century.

In sum it becomes clear that fragmented dirhams are far from being an exception in the early ninth century (Figs 3 and 4). And as far as we currently know there were no sufficient weights and balances to determine the value of fragmented coins. For this reason, it is possible that fragmentation was carried out elsewhere. Fragments of eighth-century dirhams that came to the Baltic regions only after 800 may indicate cutting in the Near East, but of course older coins could have been cut later. Moreover, specific dirhams seem not to have been preferred (chronologically or with respect to specific mints) when coins needed to be cut. The dirham finds from Truso as well as the interesting hoard from Mokajmy-Sójki should indicate that at least part of the fragmentation was carried out in the Baltic. How this worked if one had to "pay" by such small pieces without weights and balances remains a task for further research.

But there are some weights and balances. Lead weights, which have their main distribution around the North Sea,[57] are known from several places – Helgö[58], Åhus[59], Uppåkra[60], Birka[61], Paviken[62], Haithabu[63], Kaupang[64], Groß Strömkendorf[65] and Truso[66]. The pieces of lead normally have a simple flat and cylindrical form; their shape and weight do not seem to follow any rules,[67] while the cubo-octahedral and spherical

55 12 half a dirham, 10 thirds, 28 quarters, 8 fifths, 38 sixths, 14 eighths, 1 ninth, 18 tenths, and 52 below a tenth (Bartczak/Jagodziński/Suchodolski 2004, 31).

56 Bartczak/Jagodziński/Suchodolski 2004, 22.

57 Steuer 1987, 460-461.

58 Kyhlberg 1980, 291-293. Nearly all eighth- and ninth-century dirhams from Helgö were cut, often into very small pieces (Hovén 1986).

59 Callmer 1984, 74.

60 Gustin 1999, 261 fig. 10; *idem* 2004, 89-96.

61 Kyhlberg 1986, 153-154; Gustin 1999, 256-257 fig. 4-6; *idem* 2004, 89-96. Mainly from the "Black Earth" (Svarta Jorden).

62 *Idem* 1999, 255 fig. 3.

63 Steuer 1987, 461.

64 Unpublished; pers. communication Dagfinn Skre; http://www.kaupang.uio.no/dokumenter/aarsb_2001/kapittel4.htm.

65 Unpublished; pers. communication Hauke Jöns.

66 Unpublished; pers. communication Marek Jagodziński and Heiko Steuer.

67 Steuer/Stern/Goldenberg 2002, 321.

weights apparently do. For this reason, a systematic overview is missing, and this situation makes a detailed analysis a future task. That craftsmen mainly used lead weights to produce specific alloys is just a suggestion. The lack of pure metals (with the possible exception of gold) could mean that the mixture of alloys was more a product of trial-and-error than of exact measurement of different metal pieces. In this case there would be no reason to assume that the lead weights were not used for silver coins. Even their missing "standardisation" would not have been an obstacle. Just as with the later weights, both partners of a transaction must have used their own weights to come to an agreement by checking the differences with reference to foreign weights (instead of having an overall standard of weights).

Conclusions

The "regular" fragmentation in ninth-century hoards raises some doubts if dirhams were normally counted before the late ninth century. But the interpretation remains uncertain. 1: It is – without autopsy – impossible to be sure if the fragments were cut or broken, and some fragmentation could be the result of damage during the uncovering of a specific hoard. 2: Because for most hoards only the number of whole and fragmented dirhams is given in publications, it would be necessary to weigh all the pieces. Then it will become clear if there are regular fragments, which perhaps were counted. 3: We cannot know where fragmentation was carried out – in East Central Europe, indicating an intense circulation, or already in the East, and then providing no information about the monetary situation around the Baltic Sea?

Normally it can be assumed that the composition of hoards reflects the "money" in circulation. Nevertheless we have to be aware that at least in some places or regions "a hoarder might have preferred whole dirhams or large fragments"[68]. This would explain the coexistence of hoards both with and without fragments. There is another reason to suppose that the actual fragmentation was more intense than the known material suggests. If only whole coins are known today from hoards uncovered in the nineteenth century or even earlier, this might be a result of the interest of (public and private) coin collectors who were primarily interested in "nice" specimens and perhaps threw away the fragments.

If the chronology of dirham hoards[69] and of weights and balances[70] is right, then we need an explanation for the ninth-century fragments. Wherever they had been cut, how could they have been used as a means of payment? Were they counted because there

68 Metcalf 1997, 305.
69 Normally based on the most recent coin.
70 Depending on the dirhams.

were no sufficient weights? Or were the cylindrical lead weights at least sometimes[71] used to measure the silver, which seems to be the most likely interpretation? In the case of Truso it must be asked moreover what did they weigh on the many weights found from the tenth century, a period without any coins on site (as far as we know today). Amber may be a possible answer.

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71 At the same time craftsmen may have used them.

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Early medieval centre in Pohansko near Břeclav/Lundeburg: *munitio*, *emporium* or *palatium* of the rulers of Moravia?

Jiří Macháček

The majority of historians from Central Europe assume that a political entity existed in the ninth century within the territory of modern Moravia, the eastern half of the Czech Republic.[1] The name of this entity was coined by adopting a term from the work *De administrando Imperio* by the tenth century Byzantine emperor Constantine VII Porphyrogenitus. The term was "megale Moravia".[2] From a host of written sources that mention the Moravians, the most important undoubtedly include the Frankish annals, in particular the Annals of Fulda and saints' lives, of which the outstanding ones are the Old-Slavonic biographies of Constantine (Cyril) and his brother Methodius. Also essential is the correspondence between the Moravian rulers and the Popes and Byzantine emperors as well as the travelogues of the Jewish-Arabic merchants.[3] Unfortunately, despite their variety the written sources on Great Moravia tend to be relatively difficult to interpret and sometimes give rise to academic debate.[4] Nevertheless, all historians agree that in the ninth century a powerful political entity emerged in the eastern part of Central Europe, which gradually became a respected and integral part of the civilization of post-Roman Europe. Through the memorable *Privilege Industriae tue* of Pope John VIII of 880 the Moravian ruler and all his people came under the immediate protection of the Roman Curia,[5] thus formally attaining a position in Europe similar to that of, for example, the Anglo-Saxon kingdom of Alfred the Great.

The history of Great Moravia, as we know it from the written sources, is, above all, a history of military conflicts with the neighbouring East Frankish Empire. However, it is also a period of unexpected cultural growth of the whole region symbolized by the activities of the Byzantine mission and the creation of original Slavic literature.[6]

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1 E.g. Třeštík 2000, 298; Wolfram 1987, 359-367; Žemlička 2002, 107.
2 Great or Old Moravia (Bowlus 1995, 9).
3 E.g. Havlík 1964, 32-48.
4 E.g. location of Great Moravia: Bowlus 1995; Eggers 1995; Wolfram 1987, 360.
5 Třeštík 2000, 301.
6 Vavřínek 2000, 304-310.

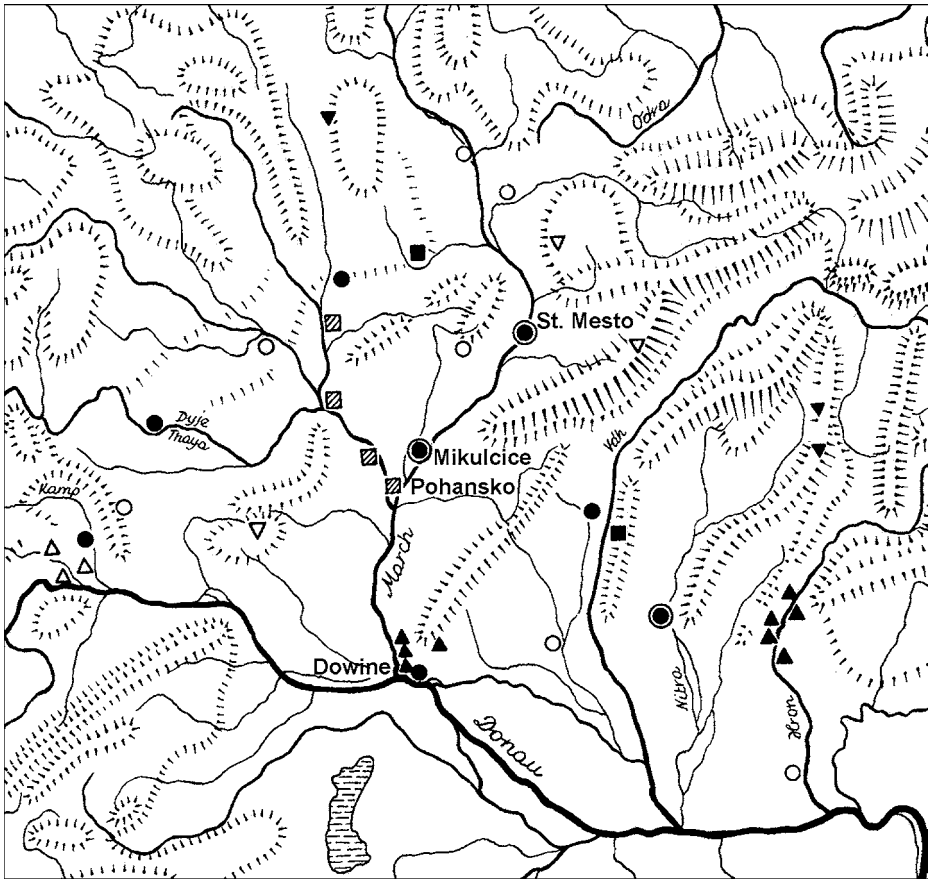


Fig. 1. Ninth century Moravian centres and fortresses

The above mentioned aspects of the development of Great Moravia are reflected in the rich archaeological finds from the ongoing systematic field excavations that started in the 1950s.[7] In Moravia and Slovakia the investigation was focused mainly on the extensive early medieval agglomerations (Fig. 1), with stone-built religious architecture, massive fortifications, rich graves of the local elite and evidence of intense craftsmanship and long-distance trade. One of the agglomerations that stand out is Pohansko near Břeclav, a site exceptional both for its status and function within early medieval Moravia, and the extent of our archaeological knowledge about it. The in-depth knowledge that we have gained is due to large-scale field excavations, modern processing using state-of-the-art computer technology and across the board multidisciplinary collaboration.

7 Albrecht 2003, 128-136, 178-192.

In this paper I would like to start by considering the significance of the whole early medieval agglomeration in Pohansko based on the results of earlier and more recent investigations. The findings will then be used as a starting-point for a broader comparison of Pohansko with related sites in western and northern Europe where social developments similar to that of Great Moravia in the early Middle Ages can be expected.

The early medieaval centre at Břeclav-Pohansko lies on the Moravian-Austrian border in the south-easternmost corner of the Czech Republic, in an area of floodplain forests above the confluence of the Morava and Dyje Rivers. Knowledge of it comes primarily from archaeological excavations, carried out at the site since 1958 by the Institute of Archaeology & Museology of the Philosophical Faculty of Masaryk University in Brno. Archaeological research at the site has been underway since 1958 and has uncovered a wealth of artefacts, providing insight into early medieaval society and culture. In that time, 140,731 m² have been excavated (Pl. 22), uncovering 1,346 settlement features, 872 graves with skeletal remains, 55 cremations and thousands of post holes. More than 200,000 artefacts have been inventoried from the excavations here.

The excavations carried out have identified, first of all, a settlement from the time of the great Slavic migration from the sixth century to the first half of the tenth century. Evidence of an early Slavic settlement from the sixth to eighth century was preserved in the northern part of the site. This was clearly an agricultural colony of the nucleated type, and it was associated with a cremation cemetery of 55 graves.[8]

The fortification was built sometime in the ninth century. The easily visible *vallum* is all that remains of a shell rampart with a stone facing wall, earth fill and internal wooden walls. The fortification is 2 km long and was originally about 6 m wide. It encloses an area of some 28 ha and is the largest fortification in the central part of Great Moravia.[9]

A magnate's court was found within the enclosure in the north-west part of the site. This was a rectangular settlement formation of around 1 ha, surrounded by a wooden palisade, and built in two phases in the ninth century. Within the court, a sacral area containing a church and cemetery was divided from the magnate's residential dwelling, large wooden halls (a meeting place for armed retainers or important members of Great Moravian society) and an economic area. In sum, there were some 50 features. The church was surrounded by a cemetery with graves rich in artefacts. In the ninth century, members of court society were buried here. Of the 407 graves excavated, 4 contained swords, 8 axes, 32 spurs and 46 gold and silver jewellery according to the Byzanto-Oriental fashion. The court presents us with one of the forms of an early medieaval ruler's residence.[10]

8 Dostál 1982a; *idem* 1985.
9 *Idem* 1979; *idem* 1984; Macháček 2001a, 283.
10 Dostál 1975; Macháček 2001a.

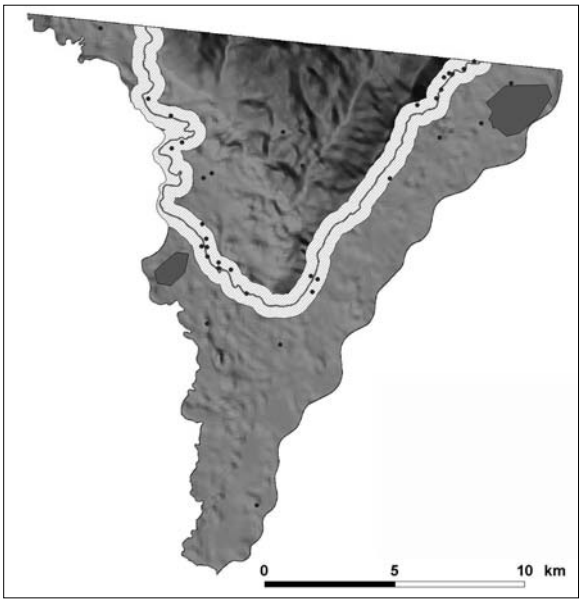


Fig. 2. Agricultural environs of Pohansko and Mikulčice

The other area within the enclosure was occupied by craftsmen. Different places of this area have been excavated. The presence of various crafts can be established from the finds of tools, raw materials and semi-finished products. The features formed groups divided by open areas or fences; in these a craft settlement was developed.[11] The character of the burials which occur in small groups or lie isolated in the craft area indicates that these were the graves of members of the lowest social status.[12]

Significant settlement activity has also been identified in the baileys. Nine hectares of the Great Moravian settlement area in the southern bailey have been surveyed. In all, 436 settlement features have been identified, of which almost a quarter were common Slavic sunken huts with stone hearths in the corners. After finds of equestrian equipment such as spurs or stirrups, we believe that armed retainers lived here. In the southern bailey there were more than 200 graves in which also weapons (sword, axes, spears) and spurs appeared; this is clearly linked to a dislocation of retainers in this area.[13]

In the ninth century the early medieval agglomeration in Pohansko covered an area of approximately 50-60 ha. Archaeological investigations or geophysical measurements identified remains showing intense settlement activity within the whole area. The number of local inhabitants must have been quite large, although the exact numbers are difficult to establish. At any rate, Pohansko cannot be considered self-sufficient, especially in terms of food production. Situated in the floodplain of the Dyje (Thaya), the

11 Dostál 1993; Macháček 2002.
12 Dostál 1982b; *idem* 1993.
13 Vignatiová 1980; 1992.

Fig. 3. Dendrochronologically dated well from craftsmen's precinct in Pohansko

immediate surroundings of Pohansko were hardly suitable for agricultural production even in the Middle Ages. As a result, a network of agricultural settlements arose in the environs of the Pohansko, in the area where the floodplain borders with the river terraces (Fig. 2), in order to supply the populous centre.[14] Some of those settlements have been partly examined. In addition to pithouses they contain underground silos for grain (grain pits), that are lacking among the buildings in Pohansko.[15]

The dating of the Great Moravian centre in Pohansko has been established by examining typical artefacts. Judging from the finds of weapons, decorative belt ends, jewellery or pottery there can be no doubt that the early medieval centre in Pohansko reached its zenith sometime in the ninth century. Given the problems related to the unfinished chronological-typological system of finds from the Great Moravia period we are, at present, not capable of providing a more exact dating. Attempts to estimate the total duration of its existence are equally difficult. The last remains of the reduced settlement go back to sometime in the first half of the tenth century when the site was permanently abandoned.

In solving the chronological issues we have recently been helped by results from dendrochronological analysis.[16] For the time being, we have only one reliable date available from Pohansko, that of 882[17], when the wooden construction of a well in the craftsmen's precinct was built (Fig. 3). Around this date we expect that the most dramatic growth in the local settlement happened. This is supported by the workmanship of the local pottery, based on which the development in Great Moravia was divided into

14 Goláň/Kučera/Macháček 2003; Goláň/Macháček 2004.
15 Macháček 2001b.
16 Poláček/Dvorská 1999.
17 According to Jitka Dvorská, Brno, 2001.

two main phases. Most of the features in the craftsmen's dwellings may be ascribed to the later phase, to which the dendrochronologically dated well also belongs.

Let us now consider the discoveries made in Pohansko within a broader context and compare it with similar sites from the other parts of early medieval Europe.

There can be no doubt that the centre of the early medieval agglomeration in Pohansko is the so-called court of a magnate (Fig. 4).[18] As had been pointed out many times it resembles the best examples of Carolingian-Ottonian structures of a residential *cum* representative nature. Striking structural parallels can be found between the court in Pohansko and the so-called *palatia* – centres of royal palace complexes from the Carolingian-Ottonian period. These are groups of buildings that included the royal residence, chapel and a hall.[19] They were situated within a relatively large, specially enclosed or fortified area. The *palatium* (court of a magnate) in Pohansko has a markedly similar appearance to the building structures of the early phase Ottonian royal palace complexes in Tilleda, Grone and, possibly, the sites close to royal palace complexes in Elten and Gebesee.[20] The decisive factor in the comparison is the relative position of the different elements of the *palatium*. The church, which is usually situated close to the entrance in the Carolingian-Ottonian royal palace complexes (as in Pohansko), is adjoined by the royal residential buildings. These are all very similar in nature in the above mentioned sites, being mostly isolated, neighbouring houses of a relatively small size, standing next to one another in a row behind the church. The significant characteristic is their close relationship to the church.[21] The building of the (assembly) hall, which is yet another important component of the royal palace complex, was used for congregation on special occasions. Investigations carried out on the German sites show that the smaller varieties of the large assembly buildings were about 9 m wide and over 20 m long,[22] which roughly corresponds with the structures uncovered in Pohansko.[23] In Pohansko, and in Tilleda, Grone and Gebesee the large above-ground assembly buildings within the *palatium* are found on the side opposite to the church and the residential buildings. An extensive, empty, undeveloped area is situated between the two clusters of buildings (Fig. 5).

The court in Pohansko was enclosed by a massive, almost square-shaped palisade separating it from the remaining area within the fort. A similar form is known from the Carolingian-Ottonian royal palace complexes, where the *palatium* proper was isolated from the bailey with evidence of craft production. From the ninth century the baileys would be enclosed within their own fortification.[24] They bear comparison to the settlement

18 Dostál 1975.
19 Binding 1996, 64.
20 *Idem* 1996; Donat 1996, 111-126; *idem* 1999, 184-193; Grimm 1968; 1990.
21 Binding 1996, 65.
22 *Idem* 1996, 59, 64.
23 Macháček 2001a, 281.
24 Binding 1996, 25, 64, 163, 171, 175, 181, 186, 190, 193.

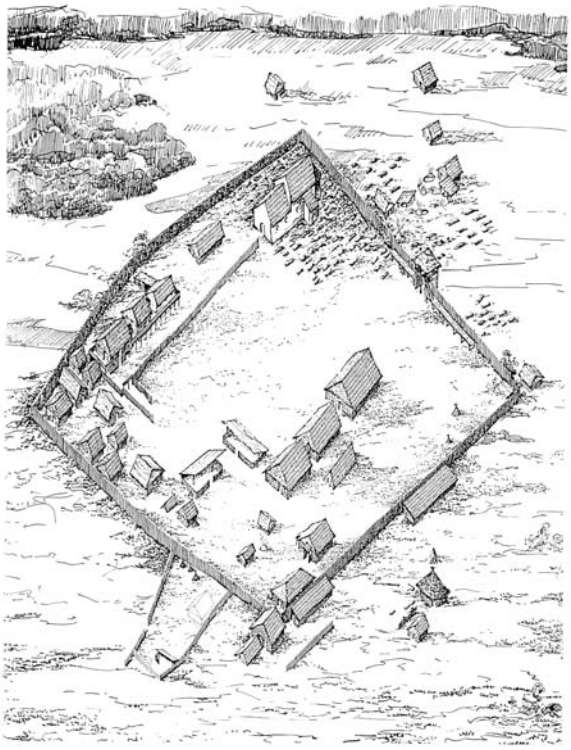


Fig. 4. Court of a magnate (*palatium*) in Pohansko

of craftsmen also found within the fortification in Pohansko. Similar craftsmen's precincts were identified, for example, in the royal palace complexes in Tilleda, Helfta, Mühlhausen or Gebesee and are also mentioned in *Capitulare de villis* from 800.[25] The personnel of the Carolingian royal courts consisted mainly of the serfs (*servi*), who were mostly women (*serviles feminae*). This corresponds with the situation in Pohansko, where, in the craftsmen's precinct, graves of its inhabitants scattered individually or in small clusters contained very poor grave goods. As the masculinity index indicates, women significantly outnumbered men.

Just as in the Carolingian-Ottonian royal palace complexes, Pohansko received its supplies from the small agricultural settlements scattered throughout its agricultural environs. The settlements specialized in growing grain crops but also delivered meat to the centre. This is supported by the results of osteological analyses and the distribution of the main species of domesticated animals. While in the *palatium* in Pohansko the domesticated pig clearly prevails (47 %), in the investigated agricultural settlement the ratio of pigs, cows, and sheep is basically equal.

25 Binding 1996, 51, 171; Donat 1996, 123-124; *idem* 1999; Grimm 1990.

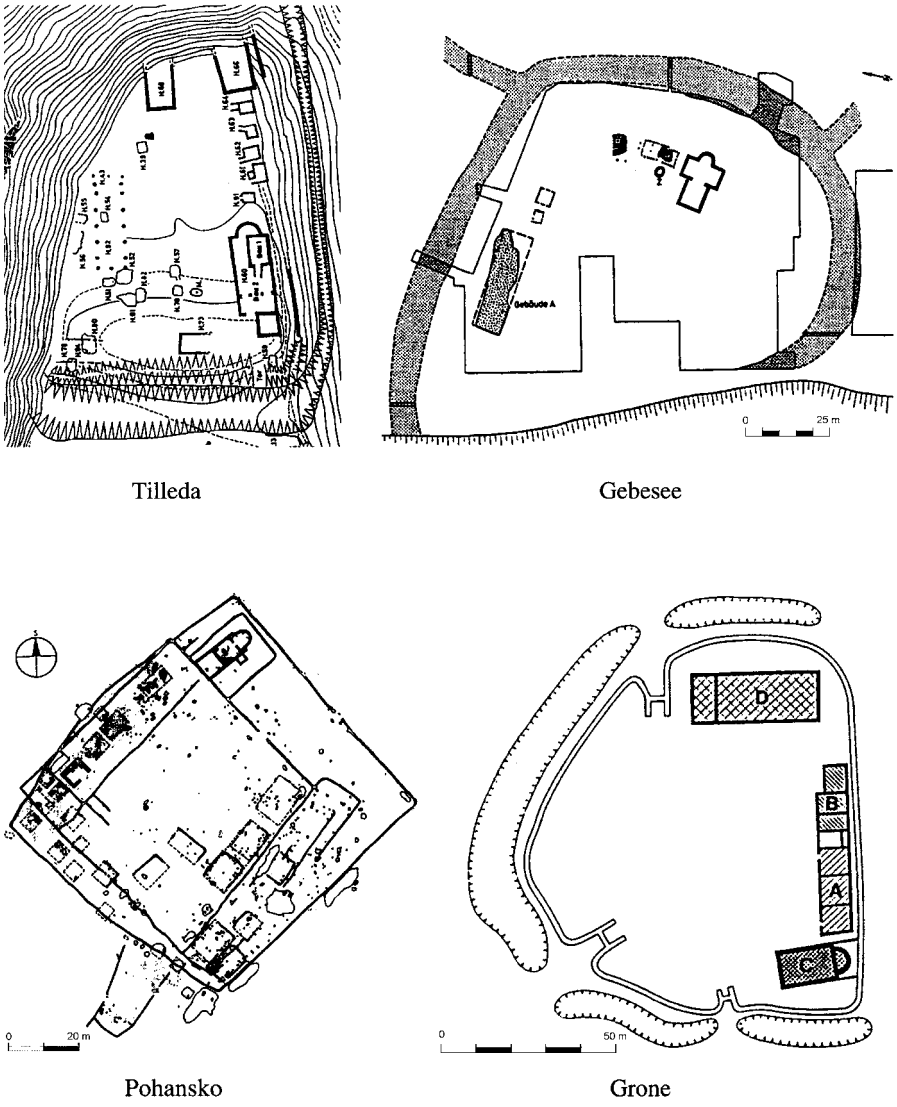


Fig. 5. Court of a magnate (*palatium*) in Pohansko and some early Ottonian royal palace complexes (same scale)

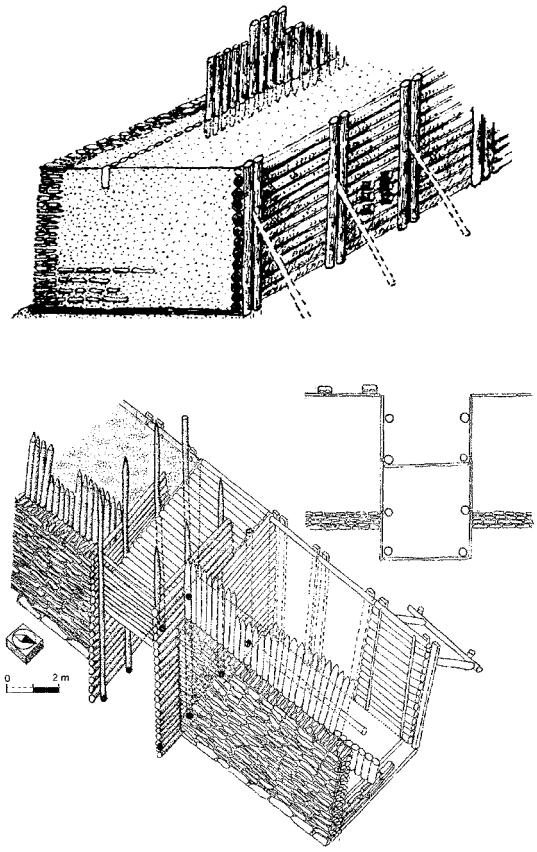


Fig. 6. Reconstruction of the fortification and gate from Pohansko

Based on the above mentioned findings it seems that, from the formal viewpoint, Pohansko corresponds to the residencies of early medieval rulers. It may have been modelled on the Carolingian royal palace complex, which still remains archaeologically obscure. It might have been built by one of the Moravian rulers as *imitatio imperii*[26], since we have very good reason to assume that they spent part of their youth in Bavaria at one of the royal residencies there.[27]

Pohansko was at the same time highly important militarily. This is evident from the fact that its massive fortification was the largest enclosed fortification in Great Moravia. The area surrounded by the rampart in Pohansko exceeds many times that of the most fortified German royal palace complexes known to us.[28] The construction of the two-kilometre-long fortification (Fig. 6) must have been a very complex project in terms

26 Gabriel 1986, 360-362.
27 E.g. Kučera 1986, 71-72.
28 Macháček 2001a, 283, fig. 6.

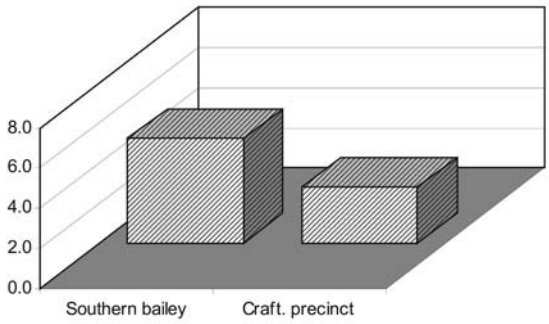
of logistics. This is corroborated by the fact that sandstone and limestone needed for building the facing apron wall were imported from a great distance. A geological analysis confirmed that the construction material came from the south-western part of the White Carpathian mountain range. The quarries were 25 km away from Pohansko.[29]

Pohansko was conceived as a massive Great Moravian fortress from the very beginning. The buildings within it were built at the same time as the rampart and were adapted to fit within the complex as the orientation and layout of the internal built-up area copying the rampart confirms. In the northern section the layout matches the orientation and shape of the inner bailey of the *palatium* and a special cult fencing, which in the early stage of the court's existence accommodated the church.[30] In the investigated part of the craftsmen's precinct the post-hole and sunken structures as well as graves are arranged alongside the rampart or at a right angle to it. Where the rampart turns, the internal layout also changes its orientation.

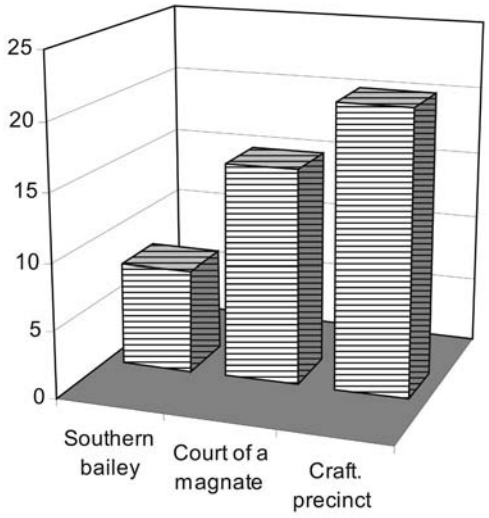
The massive fortification was of cardinal importance to the existence of the large centre. Far from being merely a protection against the enemy, it also served as a barrier against the natural elements. A computer-based digital elevation model (DEM) clearly shows that, given the surrounding terrain level, the southeast section of the fort was extremely low (Pl. 23). In a floodplain this means acute danger during floods. Bearing in mind that archaeological excavation in the area provided evidence that it was extensively populated, the rampart must have acted as effective protection against floods. Without it, the early medieval Pohansko would not have been able to withstand the natural elements or military assaults.

Protection against the enemy was ensured both passively – through the fortification – and actively – by concentrating military forces ready for action in the vicinity of the fort. Evidence of the permanent presence of a large group of people who did not engage in agriculture or crafts abounds in the southern bailey.[31] The area yields numerous finds confirming the presence of cavalry (Fig. 7) – mostly objects that can be classified as horseman's gear (stirrups, bits and spurs). For every 100 settlement structures in the southern bailey, there are 5.2 objects related to horseman's accessories. This is almost twice as many as within the craftsmen's precinct inside the fort where it is only 2.8 objects (Graph 1). At the same time, the number of production tools found in that area was relatively low compared to the craftsmen's settlement. For every 100 settlement structures in the southern bailey there are 7.7 whorls (Graph 2) or 22.5 bone awls (Graph 3), while within the craftsmen's precinct, it is almost three times that amount (21 whorls and 58 bone awls). The profound differences between the dwellings of the warriors from the southern bailey and the craftsmen residing inside the fort are also striking. While in the southern bailey simple Slavic pithouses, common in the surrounding agricultural

29 Štelcl 1971, 5-9, 12-13.
30 Macháček/Pleterski 2000.
31 Vignatiová 1980; *idem* 1992.



Graph 1. Number of objects from horseman's gear per 100 features in southern bailey and craftsmen's precinct in Forest nursery

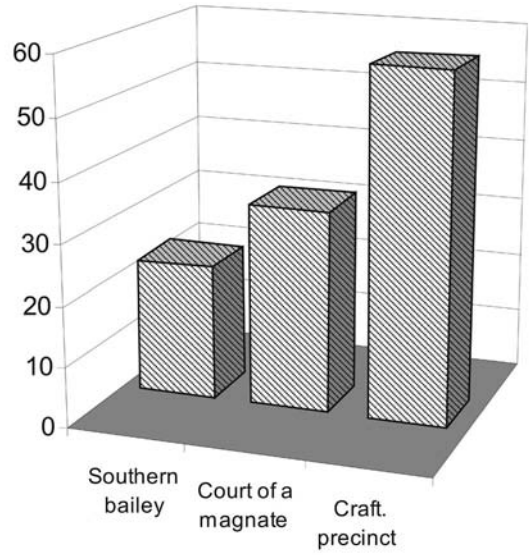


Graph 2. Number of whorls per 100 features in southern bailey, court of a magnate (*palatium*) and craftsmen's precinct in Forest Nursery

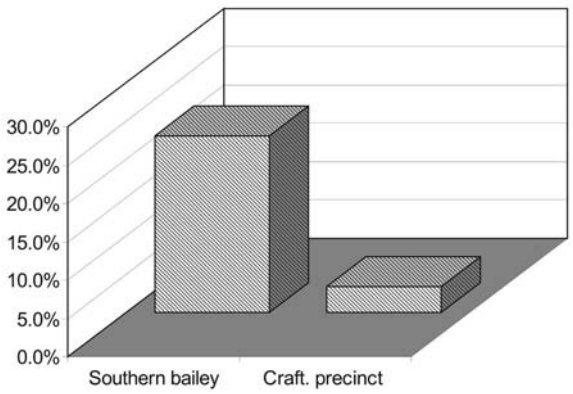
settlements, clearly dominate, they are a rare find inside the ramparts. In the craftsmen's precinct they make up 3.4 % of all the sunk structures, while in the southern bailey it is 23 % (Graph 4). The pithouses in the southern bailey are laid out to form either rows or to encompass a circular centre (Fig. 8).

The situation established in the southern bailey in Pohansko is by no means exceptional. It is similar to the conditions in early medieaval Meißen, which is well documented by both written and archaeological sources.[32] This strategically placed castle of the German kings was founded in 929 in the territory of Slavic tribes. It was frequently a target of military campaigns. Written reports inform us that the *suburbium* was inhabited by cavalry of a lower social status with their families. Their task was to defend the castle

32 Lübke 2000; Schmid-Hecklau 2000.



Graph 3. Number of bone pointed tools per 100 features in southern bailey, court of a magnate (*palatium*) and craftsmen's precinct in Forest Nursery



Graph 4. Proportion of pithouses in southern bailey and craftsmen's precinct in Forest nursery

against hostile attacks. Failing to hold the *suburbium* during a Polish attack in 1015, they were forced to retreat inside the *akropolis*. The archaeological excavation of the *suburbium* reveals that in the tenth and eleventh centuries simple dwellings, lining the roads, were erected using boards or wickerwork while evidence of craftsmanship or extensive storage facilities is completely missing. The finds were made up by an overwhelming number of horseshoes.

For the Moravians, the strategic role of Pohansko, where the military defence was organized along the same lines as in Meißen, was immense. We are also informed about the need for and existence of massive forts within Great Moravia by historical reports. For example, the mention in the Annals of Fulda concerning the "Rastislav's unspeakable stronghold, unlike those of yore", being the scene of battles between the

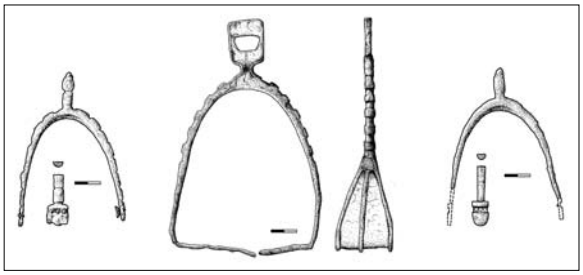


Fig. 7. Horseman's gear from southern bailey in Pohansko

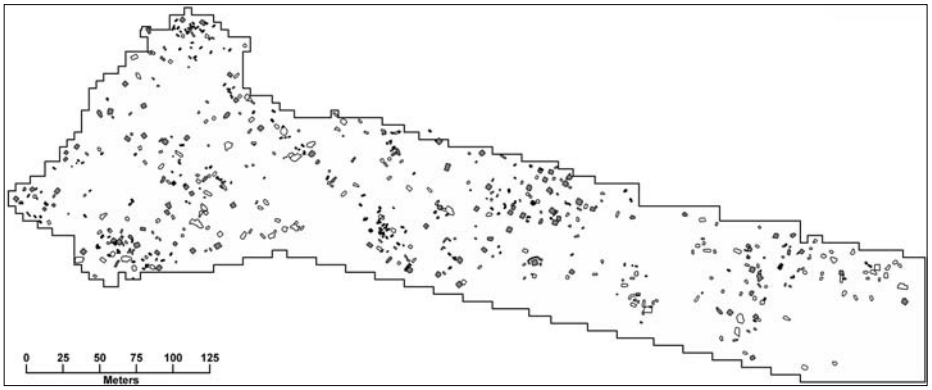


Fig. 8. Southern bailey in Pohansko. Grey – rectangular and square pithouses. Black – graves

Moravians and the Frankish armies led by Charles – the youngest son of Louis the German – is well-known. Unfortunately, the annals do not reveal the name or location of the fort.[33]

From the strategic point of view, fortifications at the confluence of rivers, being the key nodes of any communication network, were an extremely important element in the defence against the advancing enemy. The Annals of Fulda inform us of fights near Dowine, situated at the confluence of the Morava and the Danube.[34] Another key location of the Moravian defence was 60 km to the north where the Morava is joined by the Dyje. There, the enemy advancing from the southwest along the right bank of the Morava was forced to wade through the river. It was at exactly that location, guarding the access to the central areas of Great Moravia, where Pohansko was situated (see Fig. 1).

Fortunately, contacts of Great Moravia with the world around it were not exclusively restricted to those of a military nature. Written sources tell us of merchants coming to Moravia to take part in the well-known market mentioned, among others, in the so-called tariff of Raffelstetten of 904 or in some Arabic sources. The goods that

33 Bowlus 1995, 161; Wolfram 1987, 362.
34 *Idem* 1987, 286; Štefaničová 2000, 327-328.

Fig. 9. Lead talents from craftsmen's precinct (Forest Nursery) in Pohansko

were in such great demand, transported from Moravia mostly to Spain or via Venice to the Middle East, were in fact slaves.[35] The other exported "commodities" included, for example, wax, honey or horses.[36] In the opposite direction, to Moravia, long-distance trade consisted of supplies of luxurious objects.[37] Some finds from Pohansko can be considered as imports arriving from the west or the south-east. To name but a few, they include swords with a damask-steel blade,[38] or some components of belt sets, such as belt ends embellished with coloured enamel[39] or silk.[40] While these exclusive objects may have found their way to Pohansko as gifts or loot, this possibility may be completely ruled out in the case of another group of imports. It is represented by raw materials and everyday objects of which some were transported from a much shorter distance. A typical example can be seen in grindstones made of various minerals and brought in from several different directions, as confirmed by a petrographical analysis of a collection of 207 grindstones.[41] A majority (62 %) comes from mica schist, the resources of which were situated 60 km north-west of Pohansko. The second largest group of grindstones (14 %) were made of rhyolite, quarried in the mountain ranges 150 km east. Material coming from afar was also used to manufacture stone whorls or crude graphite added to pottery products.[42] Lead, imported much less frequently, is another raw material used in the non-ferrous metal metallurgy. In Pohansko it is found in the form of talents (Fig. 9) or accretions.[43] There were also precious metals processed on the site in the early Middle Ages, as confirmed by the find of a crucible with remains

35 E.g. McCormick 2001, 691, 767, 774; *idem* 2002.
36 E.g. Warnke 1987.
37 Bravemanová/Charvát/Novák/Tomková 2000, 136; Jankuhn 1967; McCormick 2002; Poláček 2000a; Třeštík 1973.
38 Vignatiová 1993.
39 Kalousek 1971, 147-148, tab. 42; Wieczorek/Hinz 2000, 234-235.
40 Kostelníková 1980.
41 Gilíková 1997.
42 Dostál 1998.
43 *Idem* 1990; Macháček 2002.

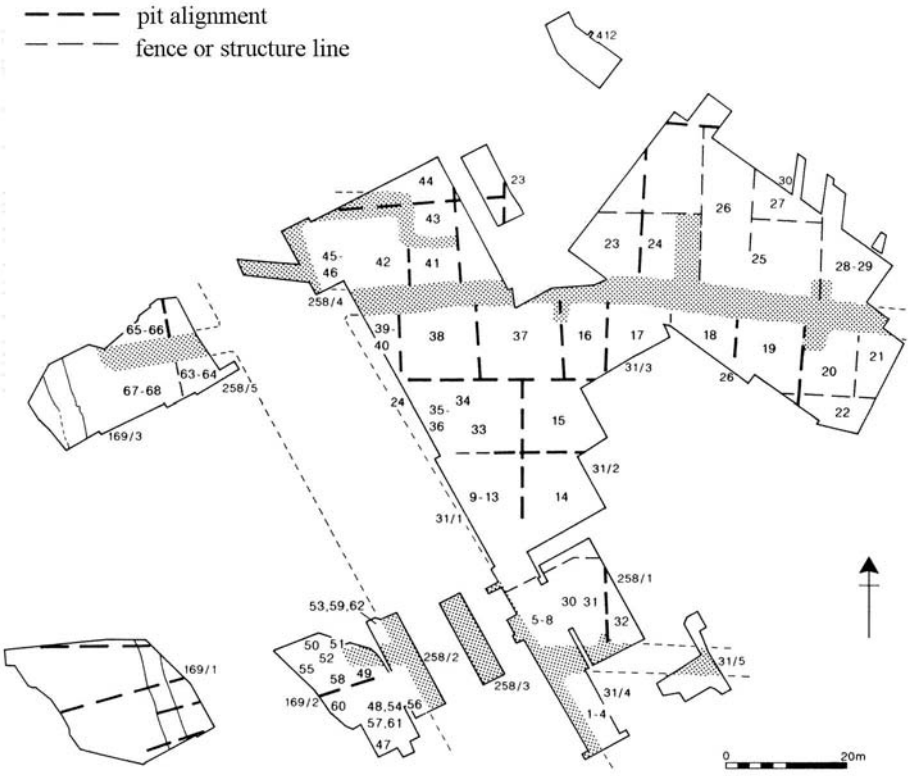


Fig. 10. Hamwic/Six Dials. Postulated layout of properties

of silver. However, we know nothing about the form in which gold and silver reached Moravia. Coins are extremely rare,[44] and no raw materials in form of talents have been uncovered. Yet, given the frequent finds of Great Moravian jewellery, one can assume that there was an abundant flow of precious metals to Moravia.[45]

What could have been the role of Pohansko in the transfer of goods within Great Moravia? An answer to this question may be revealed by new excavations complemented by extensive geophysical measurements (Pl. 24). It was found that the build-up inside the fortification exhibits remarkable formal similarity with the settlement structure of the important *emporia* examined in western and northern Europe. The fundamental element of that structure is a unified design of urban planning, which could only have been enforced by a higher authority – the ruler or his representative. The sites develop very quickly thanks to enormous investments through which they endeavour to gain control over the local production and distribution. There can be no doubt they are

44 E.g. Charvát 2000, 257-258; Kučerovská 1998.
45 Poláček 2000a, 147.

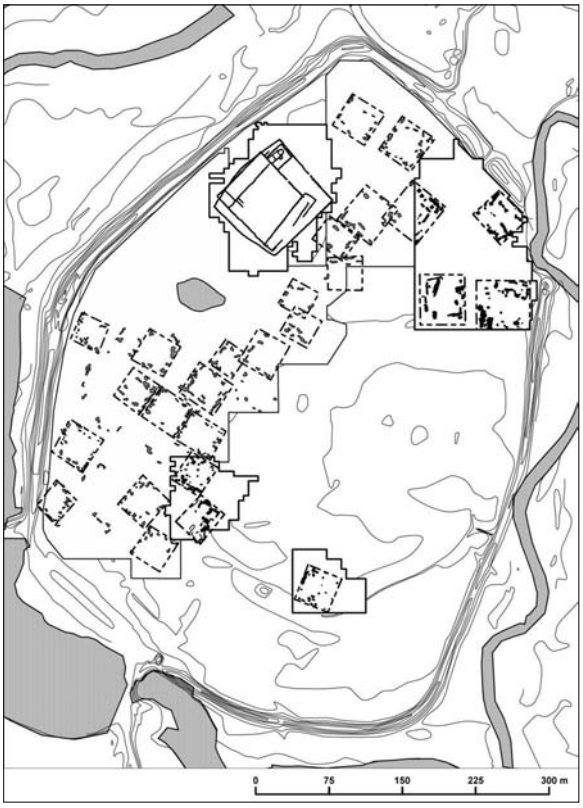


Fig. 11. Plots from Pohansko based on archaeological field excavations (black features) and geophysical survey (grey features). Interpretation

permanently inhabited urban-type settlements. They can be distinguished by the street layout, built to a plan within a pre-defined grid overlying the former cluster structure. Examples include Löddeköpinge, Haithabu, or the Anglo-Saxon Hamwic (Fig. 10) and the Frisian Dorestad.

It seems that the build-up in the *emporia* allocates too much space and extends over an unusually large area, compared to later medieaval standards. Sites of this type (such as Hamwic/Southampton – 45 ha) may be 40 to 50 times bigger than other settlements in the settlement hierarchy (agglomeration in Pohansko: 50-60 ha; fortified area: 28 ha). We are not quite certain whether the merchants stayed in the settlements or whether they pitched their tents or makeshift shelters in the immediate surroundings of the *emporia*, as later descriptions suggest. It is, however, almost certain that they were outnumbered by the local craftsmen who settled there to cater for the needs of the local elite and foreign merchants. The ruler controls the important hubs of long-distance trade either directly or through his agents. Written sources mention, for example, the *villa regalis* in Hamwic or in Ipswich. The Dane Godfred was involved in initiating the settlement in Haithabu and the Norwegian *emporium* Kaupang was also subject

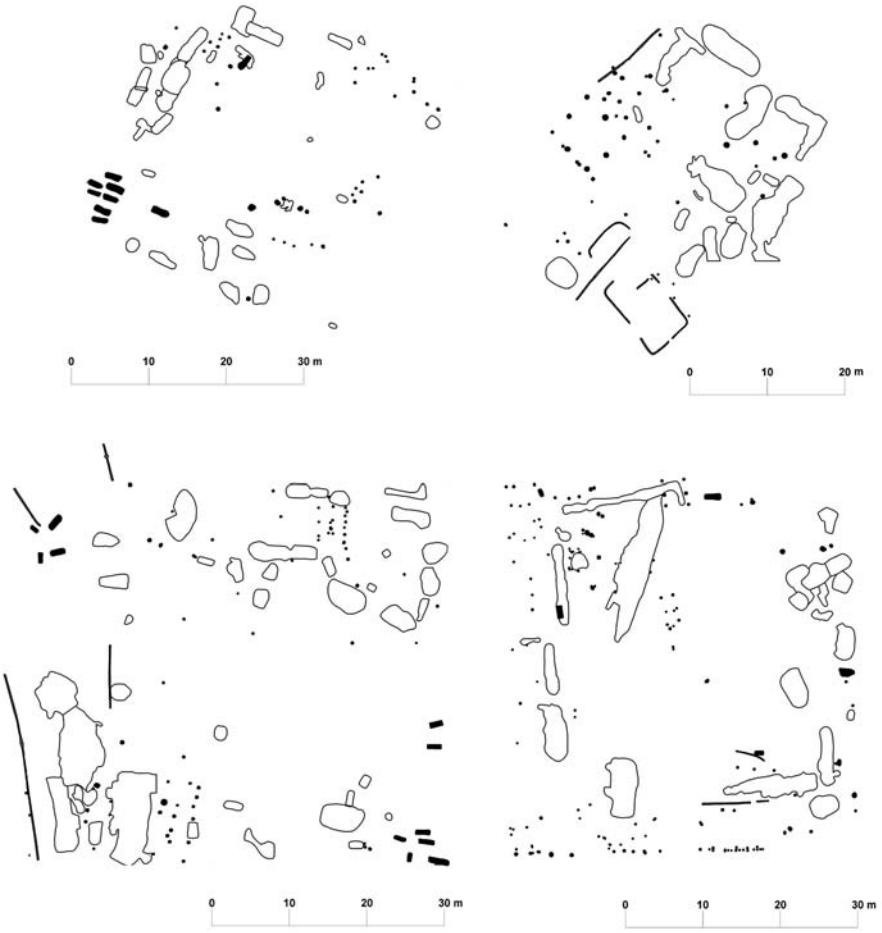


Fig. 12. Examples of plots from the field excavations in Pohansko.
Sunken structures - white, graves and post-holes - black

to control by the king. In contrast to Pohansko most of these structures have not been archaeologically identified. We can conjecture the presence of a royal or chief authority, however, from a clearly organized build-up.[46]

In Pohansko, the basic unit of the build-up is a plot or a homestead rectangular in shape the sides of which are delimited by sunken structures, post-hole buildings or palisades (Fig. 11). They had a similar orientation and shape as the *palatium* but covered a much smaller area. While the ruler's court took up an area of around 1 ha, the plots of the other inhabitants of the fort were up to 10 times smaller. Their average

46 E.g. Astill 1994, 45; Clarke/Ambrosiani 1991, 128-172; Hodges 1982; *idem* 1988; *idem* 2000.

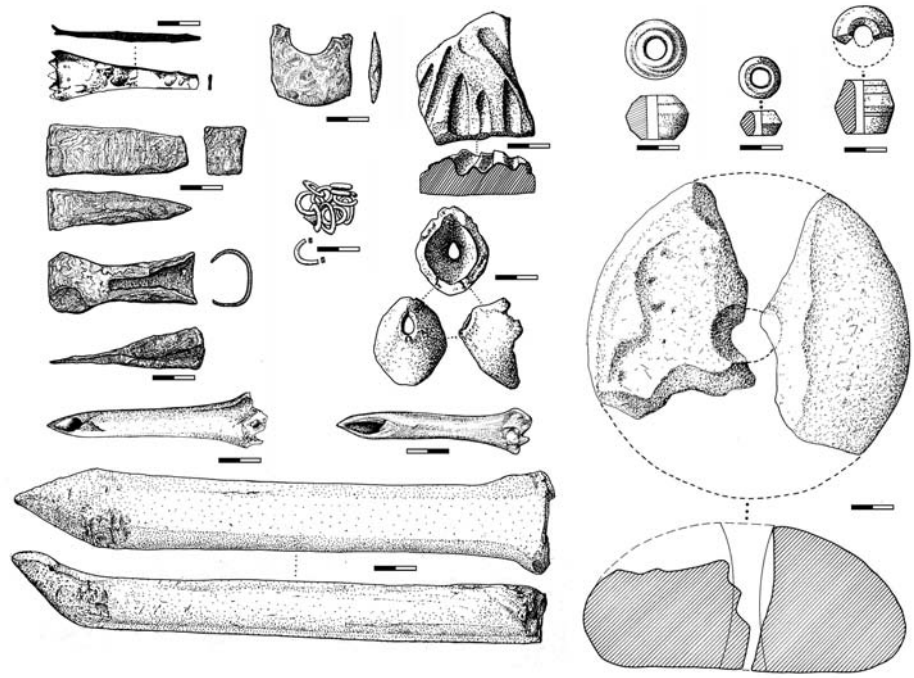


Fig. 13. Craftsmen's tools and armoury rings from craftsmen's precinct in the Forest Nursery in Pohansko

area (0.13 ha) actually matches the dimensions of early medieval farmsteads known from the Aleman environment.[47] Some parcels in Pohansko also included a small burial ground (Fig. 12).

Judging by the finds originating from such settlement structures, mostly craftsmen lived and worked there.[48] The finds include, for example, remains of smithies, with evidence of both smithing tools, and concentrations of production waste – slag. We also know the products of the workshops such as armoury rings. Non-ferrous metal metallurgy is represented by finds of crucibles and raw materials. Very intensive textile production is embodied by weights for horizontal looms, whorls and bone awls concentrated mainly in the long, sunken structures (Fig. 13). Analogies can be found, for example, in the bailey of the Ottonion royal palace complex in Tilleda, where they are interpreted as the so-called *gynecea*.[49] Other crafts are disclosed by

47 Bücker/Hoeper 2000, 311-322; Geisler 1993; *idem* 1997, 461-483; Stork 1998, 290-310.
48 Dostál 1993; Macháček 2002.
49 Donat 1996, 131; Dostál 1986, 132-134; Gockel 2000, 553; Grimm 1990, 49-54; Winkelmann 1977, 111.
50 Dostál 1990; Macháček 2002.

finds of woodworking tools or waste from the production of bone and antler objects. The overall picture of a production centre is rounded off by frequent wells,[50] a common feature also in the western *emporia*. In contrast to the southern bailey, the residential function was provided either by post-hole buildings (Fig. 14) or above-ground, possibly double-room, houses. Merchants arriving at Pohansko may have stayed in tents or makeshift shelters. Free space available for allocation to the temporary inhabitants is found in the area south of the *palatium*, where geophysical measurements detected no large, sunken structures. It could have also served as a rounding up area for the slaves who were to be sold.[51]

As opposed to the large *emporia* in western and northern Europe, Pohansko yields only small quantities of real imports brought in through long-distance trade. We should bear in mind though, that their presence or non-presence in the archaeological context depends on a number of factors, such as the length of the merchant's stay or the value and nature of the imported artefacts.[52] As an example, imports to Moravia contained hardly any pottery as it was produced in sufficient quantities and excellent quality. One need also consider the fact that the so-called Amber Trail, that Pohansko is situated on, lost its original purpose in the early Middle Ages. The trail ends in Moravia and in Lower Austria (Fig. 15).[53] In a way, it was a terminal where the merchants had only little left from their initial load purchased at the beginning of their journey.[54] The goods they were after in Moravia were thus exchanged for a general trade equivalent, that is precious metals and luxurious cloths, rather than other goods. But even that would be transferred quite quickly within Great Moravia under the mechanisms of redistribution and is found where the social elite tend to concentrate rather than in the place of actual business transactions.

Given its strategic position at the entrance to the central areas of Great Moravia, Pohansko may have taken on the role of the so-called port of trade, according to K. Polanyi.[55] These were specific neutral locations which offered security to foreign merchants, as well as storage facilities, law enforcement and contracts for the goods traded. It seems that western merchants were familiar with Pohansko, it was the only one of the important Moravian centres that was also given a German name – Lauentenburch.[56] Slightly modified, it was later used as the German name of the nearby town Břeclav – Lundenburg.

Summing up the considerations presented so far, we can draw the following conclusions. The early medieval centre in Pohansko was built to a unified design of urban

51 Cf. McCormick 2002, 175-176, 767.
52 Hodges 1982, 57.
53 McCormick 2001, 370, 376.
54 This refers to the so-called "Tröpfelmodell" of long-distance trade according to Steuer 1987, Abb. 25.
55 E.g. Polanyi 1971.
56 Třeštík 1988.
57 Hodges 1982, 27, 187-188.

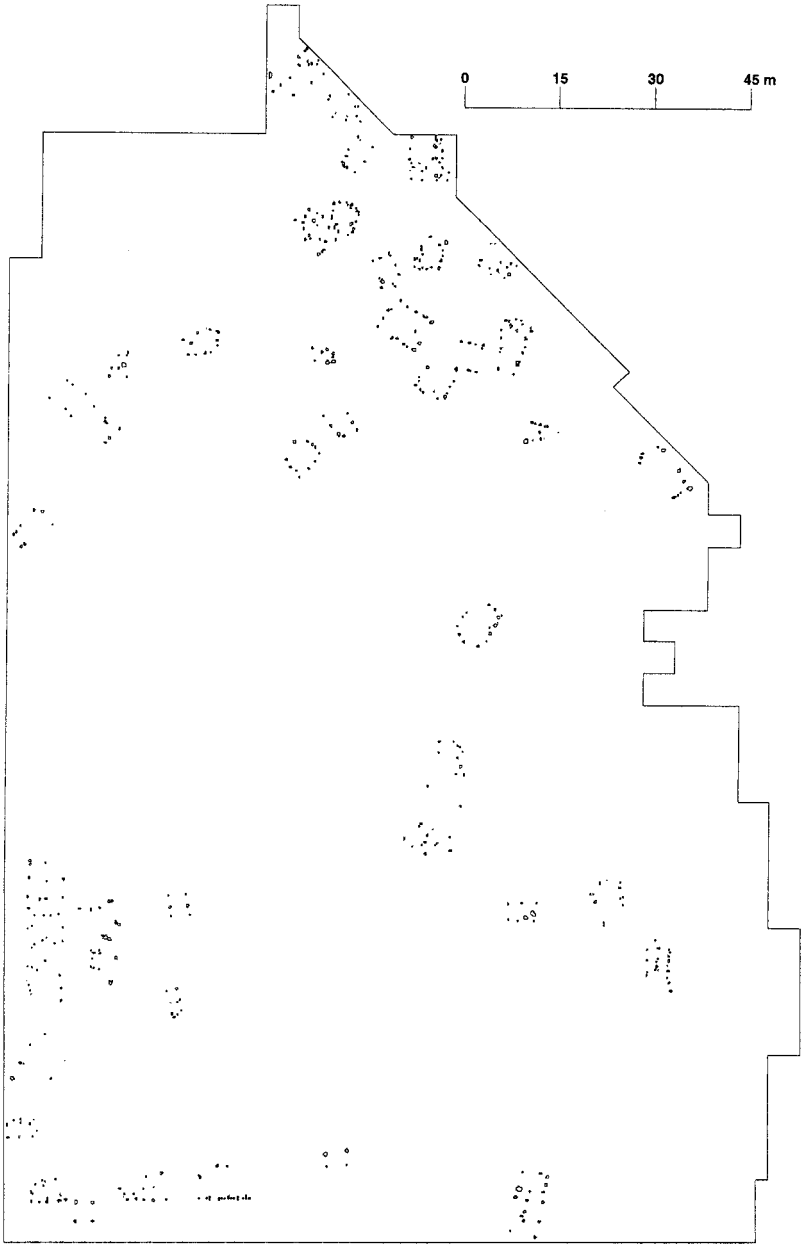


Fig. 14. Post-hole buildings and structures from craftsmen's precinct in the Forest Nursery in Pohansko

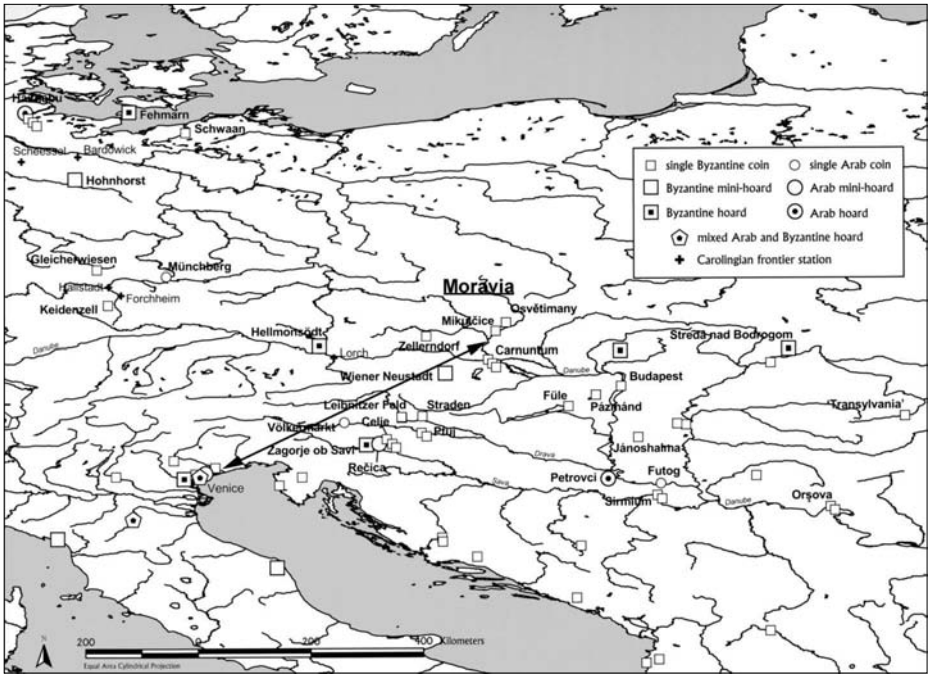


Fig. 15. The Amber Trail and Carolingian frontier stations. Arab and Bzyantine coins

planning on the site of an agricultural settlement that was earlier and inconsequential. Situated at a strategic location where Moravia could be accessed by foreign armies and merchants, it had the task of providing military protection and controlling long-distance trade. At the same time, it was a location with the concentrated production of professional craftsmen. Sites of this type could only be built by a man in possession of the highest authority in the country – the ruler. He also had one of his residencies there, modelled on a Carolingian royal palace complex. The Moravian ruler made such a huge investment in the extensive agglomeration in Pohansko in an attempt to achieve emancipation. This is related to the fact that Moravia in the ninth century found itself in the stage of the so-called cyclical chiefdoms. The term is used by R. Hodges to refer to the transition between a traditional chiefdom and a state whereby the central power is being consolidated and takes control over the economy in the regions.[57] The system undergoes transformation until the chief accumulates enough wealth required for separation from the rest of the community. The whole process is accompanied by the "mobilization" of wealth through which the chief consolidates his status and assists in the emergence of the ruling elites. Another typical attribute is the effort to establish tight control over

58 Poulík 1975; Poláček 2000b, 317-319.

his own and the neighbouring territories, which is often only temporary in nature. The logical consequence of such a development is the rise of the *emporia*, fortifications and separate royal residences. In Pohansko, all three functions merged into one. It is, at the same time, a *munitio*, *emporium*, and *palatium* of the Moravian ruler.

Pohansko may also be viewed as a settlement complementary to the most important centre in Great Moravia in Mikulčice, situated a mere 16 km away (Fig. 1). This was very likely the principal seat of the royal and religious power and a place where the members of the top ranking social strata held their property. This is confirmed by the remains of twelve churches and a massive concentration of prestigious objects uncovered during the 50 years of systematic archaeological excavation.[58] Pohansko and Mikulčice form a characteristic pair, such as for example Winchester and Hamwic in the early medieval Wessex.[59]

The structural resemblance between the early medieval centres in Great Moravia, the Anglo-Saxon kingdom and the Viking world is not incidental. It is not related to a direct implantation of models among geographically remote regions. Rather, they were a reaction to the emergence of the Carolingian empire that integrated the developed territories of the former Roman provinces. As a result of the process, social organisations were established on its western, northern and eastern limits which respond independently yet in similar fashion to the identical impulses coming from the empire.

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59 Biddle 1976, 114-116.

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Ninth-century Mikulčice: the "market of the Moravians"? The archaeological evidence of trade in Great Moravia

Lumír Poláček

In his paper of 1973 the historian Dušan Třeštík localised the key market of Great Moravia at Mikulčice. The basis of such a conclusion was the testimony of two written sources. The first and key one is the Raffelstetten customs tariff from 903-904, in which merchants sailing with Bavarian salt to "The Market of the Moravians" are mentioned. The second source is the so-called Anonymous Relation – a lost text used by a series of the Arabic sources dated to the late ninth or early tenth century and later. Here, a ruler of the Slavs S.W.N.T.BLK (Svatopluk) is mentioned living in the town DŽ.RÁT., where a fair was held every month for three days with fellow natives selling and buying all the items they needed. By linking the testimony of both sources, Třeštík came to the conclusion that "The Market of the Moravians" was the significant fair held at Svatopluk´s town. This town was identified as Mikulčice. The fair mainly involved the exchange of goods within Moravia itself; it was not the centre of long-distance trade.[1]

The interpretation of the "Market of the Moravians" as the sole central market of Old Moravia and its localisation at Mikulčice has only been adopted by historians and archaeologists with caution. Some of them believe that the "Market of the Moravians" did not refer to a specific fair, but markets in general, which were held at various centres of the Moravians.[2] The localisation of the seat of Moravian sovereigns is a point of extensive historical and archaeological debate. In my opinion the present state of knowledge hardly allows to identify this centre with certainty to any of the archeologically investigated sites. The same applies to Svatopluk´s Town from the Anonymous Relation.

Trade and the economic bases of Great Moravia in general represent a rather unknown field of the history of this Slavic state formation. The issues of trade have been discussed mainly in terms of monetary conditions.[3] Archaeology has been offering

1 Třeštík 1973, 890.

2 Pošvář 1966, 279; Havlík 1978, annotation 273.

3 E.g., Pošvář 1966; Sejbal 1979, 27-30; *idem* 1990, 289-290; Kučerovská 1980; *idem* 1996, 25-29.

general and popular-scientific summaries rather than analytical evaluations of available sources.[4] An exception is the issue of axe-shaped ingots which was elaborated in detail in several papers.[5]

In connection with the issue of trade in Great Moravia and the role which could have been played by Mikulčice, we will address the following questions: What goods were traded across Great Moravia in the context of long-distance trade? How is trade reflected in archaeological sources from Mikulčice and other centres of Old Moravia? Is it possible to identify specific places of trade on the basis of existing archaeological sources? What does the internal structure of Mikulčice suggest about the function of this centre within the state organisation of Great Moravia? This is how Třeštík´s thesis on the "Market of the Moravians" can be tested by the real archaeological situation.

Great Moravia and long-distance trade in written sources

Written documents concerning trade in Great Moravia are quite laconic, but their interpretation is relatively unambiguous and for the development of the given issue quite crucial. As far as the Raffelstetten customs tariff is concerned, Bavarian merchants coming to the "Market of the Moravians" almost exclusively imported salt while trade with "other goods" was marginal.[6] Salt might have been imported to a certain extent from Transylvania; it is indirectly attested by a request of the Frankish King in 892, to stop Bulgarians importing salt to the Moravians from their salt mines in Transylvania, thus supporting an economic blockade of Great Moravia.[7] Other imported commodities involved weapons mentioned in the capitulary from Thionville, dated 805. In this document, Charlemagne imposed a ban on selling weapons and armour to the Slavs and Avars.[8]

So what commodities were exported from Old Moravia? The Raffelstetten customs tariff suggests that the Slavs (probably from Bohemia and Moravia) offered wax, cattle, horses and slaves.[9] Another source bears witness to the existence of trade with slaves in Great Moravia – "The Life of Naum", mentioning the fate of Archbishop Method´s followers. When their master died in 886, they were sold into slavery to Jews who took them to Venice to be resold there.[10]

4 Poulík 1986, 53-54; Charvát 1998b, 43-45; Poláček 2000; Bialeková 2002, 103-104; Galuška 2004, 106-112.
5 Pošvář 1963; Pleiner 1961; Dostál 1983; Bialeková/Tirpáková 1989; Bialeková 1990.
6 Třeštík 1973, 874.
7 MMFH I, 119.
8 MMFH IV, 23-24.
9 MMFH IV, 114-119.
10 MMHF II, 178.

Moreover, the above mentioned reports suggests that trade with Moravia was shared by Bavarian and mainly Jewish merchants. "Radanites", who were of Jewish origin and are mentioned also in the Raffelstetten customs tariff, controlled the circulation of goods across the whole Euro-Asian continent on both land and sea.[11] Overall, written reports on merchants and trade in Great Moravia are quite rare. On the other hand, there exists another relatively rich source represented by numerous reports on the travel of individuals in the wider Mediterranean area. From these reports we can follow long-distance contacts within medieval Europe.[12] There are mainly two long-distance routes that are significant for the Moravian territory of the ninth century; the Danube Road and communication between Moravia and the Adriatic Sea.

The Danube Road was the only real "European" road within reach of Great Moravia.[13] It was an important nexus both between the Carolingian Empire in the West, and the Lower Danube and Constantinople in the Southeast. It was a continuation of the trans-continental "silk" road connecting Europe and Central Asia.[14] The Danube was not only a trade connection, but also a corridor the Franks used for military attacks.

The second north-south connection was the pre-historic "Amber Road" in its southern section between the Danube and the Adriatic Sea. That road connected not only Moravia and the territory of Italy, but via Venice, it mediated contacts with the whole Eastern Mediterranean (including Constantinople).[15] The aforesaid road was used by the first Christian missionaries from the Adriatic region, followed by ambassadors and clerical representatives who were heading to Rome to visit the pope. It was along this road on which slaves were transported to be loaded on ships and sailed to the Arabic world. Finds of Byzantine golden coins prove the importance of this road for trade.[16]

The geographical position of Old Moravian centres at the medium stream of the Morava River reflects the political and economic significance of the river valley as a direct over-land and water connection with the Danube.[17] All three centres of this area – Staré Město-Uherské Hradiště, Mikulčice-Valy and Břeclav-Pohansko – were situated at places where this old north-south road crossed regional communications. The significance of the Morava River stream as a trade connection is also evidenced by deposit finds of iron objects from the late eighth and ninth century, which concentrate around the Morava and Lower Dyje areas.[18]

11 Třeštík 2001a, 104-106, annotation 51.
12 McCormick 2002, 172-173.
13 Třeštík 1973, 890.
14 Charvát 1998a.
15 Tůma 1985.
16 McCormick 2002, 174.
17 Poláček 1999, 227.
18 Bartošková 1986, annex 3.

Fig. 1. Mikulčice-Valy, acropolis. Coins from the ninth-tenth century: 1. golden *solidus* of Michael III. (Constantinople, 856-866); 2. silver *denarius* of Berengar I. (Milan, 888-915); 3-4. silver *denarii* of Lambert (Milan, 894-898), both perforated on the edge

Evidence of trade in archaeological sources

The picture of Moravian trade in the archaeological sources is rather complicated. Direct archaeological evidence such as coins, scales and weights occur only sporadically. The ostensible pre-monetary means of payment – axe-shaped ingots and small pieces of fabric – provide us with only general evidence of the economic conditions of Old Moravia. Additionally, indirect evidence for trade – objects of foreign origin from Great Moravian settlements and graveyards – only give us a broad outline.

During its short existence the Great Moravian state had not reached the level to mint its own coins. Regarding the long-distance trade, the Moravians might have used golden Byzantine coins as a means of payment, or, if need be, precious metals.[19] Parallel to the generally recognised Byzantine monetary system, the influence of the Carolingian monetary system, based upon the denarius, was enforced quite slowly. The finds of Byzantine solidi from the ninth century come from Mikulčice, Osvětimany and East-Slovakian Streda nad Bodrogom.[20] Apart from these, several tiny pieces of gold in the form of strips, nuggets or prisms are known. They might have been put into the graves of significant individuals as obols for the deceased. They originate from Staré Město, Mikulčice, Břeclav-Pohansko and Nechvalín.[21] After doubts were raised about

19 Pošvář 1966; Sejbal 1979, 28-29; *idem* 1990, 289-290; Kučerovská 1980; *eadem* 1996.
20 Sejbal 1959; Halačka 1960; Eisner 1933, 256.
21 Hrubý 1955, e.g. 517; Kalousek 1971, 133; Klanica 1997, 45; Kučerovská 1996, 27, fig. I/27.

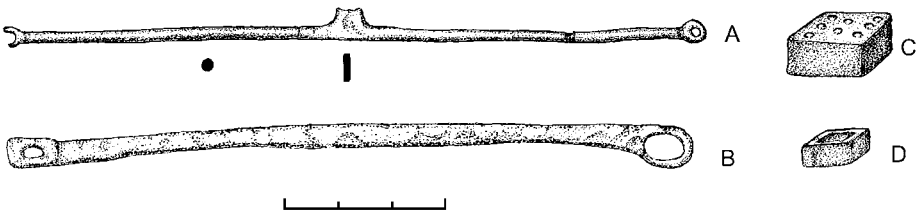

Fig. 2. Finds indicated as beams of scales (A, B) and weighs (B-C). A. Gars-Thunau (bronze, length ca 13 cm); B. Uherské Hradiště - Sady, cemetery "Horní Kotvice", grave 173 (iron, length 12,8 cm); C. Staré Město, cemetery "Na Valách", grave 114/51 (lead; 1,9 x 1,9 x 0,9 cm; 41 g); D. Mikulčice, settlement by the VIIth church in the area beneath the walls (lead, 0,9 x 1,0 x 0,5 cm; ca 3,6 g)

the dating of the denarius from Nitra-Martinský vrch to the ninth century,[22] no reliable find of a Carolignian denarius is known from the central territory of Great Moravia.[23] The interpretation of three North-Italian silver denarii from the hillfort at Mikulčice is not unambiguous (Fig. 1.2-4). The mint of Berengar I (dated to 888-915) and the punching of two other coins (mints of Lambert 894-898) could indicate a certain link to the Magyars.[24] Neither of Lambert's mints is known from the Magyar graves in the Carpathian basin. This is why numismatic experts are looking for other explanations.[25] Arabic coins have been proven so far by one find – a bronze fals of the Baghdad Caliph Harun ar-Rashid mint in the year 797.[26] The coin originates from the slope of the hill of Bratislava Castle and proves the significance of the Danube road in the period before Great Moravia.

There is also the possibility, that the total low quantity of coins from the Great Moravian territory can result from a certain misrepresentation resulting from rough methods fieldwork in the Great Moravia hillforts at the second half of the twentieth century: Sieving or rinsing of the sediments were employed only in exceptional cases and additionally, metal detectors were missing. D. Třeštík refers to other possibilities of misrepresentation: In Moravia, as opposed to other areas, it was not usual to bury coins in hoards. Moreover, golden and silver coins could be used as the raw material for jewellery production.[27] The aforesaid arguments could partially explain the present state of our knowledge. However, the main explanation of sporadic occurrence of coins should be sought in the economic system of Great Moravia, or the unbalanced condition of the Byzantine coin production of that time.

22 Bednár/Fusek 1998, 104, 106.
23 For the closest finds, see Sejbal 1979, 28.
24 Měřínský 1986, 29-31; Kovács 1989, 112, annotation 592; Kouřil 2003, 112, 114.
25 Sejbal 1989, 68; Kučerovská 1998, 156.
26 Hunka 2002.
27 Třeštík 2001b, 57, annotation 17.

As is the case with coins, even scales and weights represent quite unique phenomena in ninth-century-Moravia. The only reliable evidence of small scales for coins and precious metal comes from the Gars-Thunau hillfort in Lower Austria, i.e. outside the central part of Great Moravia (Fig. 2.A).[28] So far, other finds cannot be considered conclusive. One of them is the iron-made object from the female grave No. 173 from the cemetery "Horní Kotvice" at Uherské Hradiště-Sady (Fig. 2.B).[29] The prism-shaped rod with a loop at the flat end and with a split punched opposite end has been identified as a beam from folding scales (Fig. 2.B).[30] Another probable find of a beam is reported from the young girl's grave No. 323/49 at the graveyard "Na Valách" at Staré Město.[31] Because there is no illustration in the publication, it is impossible to assess the interpretation of this find in detail. Even if the stated examples were really evidence of scales, then they would only constitute non-functional parts, not complete scales. Moreover, the suggestion that the mentioned graves belonged to merchants can be excluded.[32] At Mikulčice, finds of scales are missing among the bronze and bone artefacts; this is true both for the settlement and the 2,500 investigated graves.

Similarly as in case of scales, even weights have been so far a unique find in the area of the Great Moravian centres. A lead prism with eight circular points from the grave of the underage individual Nr. 114/51 at Staré Město, in the cemetery "Na Valách" might be identified as a weight (Fig. 2.C),[33] followed by another rather smaller lead prism from the settlement site layer by the VIIth church in the area beneath the walls of the Mikulčice hillfort (Fig. 2.D). We should take into consideration that just like the coins, weights could have been easily overlooked as a result of rough methods during the field investigations. But considering that weights and parts of scales are quite unique finds in the areas of the Great Moravian hillforts, this is not the only possible explanation. These merchants' tools were probably only used here on a limited scale. That explanation is understandable, because Moravia of the ninth century was situated outside the area of the developed weight-based monetary system.[34] Yet before concluding this definitively, it is necessary to exclude the possibility of other objects with a similar function being hidden among finds that are not yet evaluated. Moreover, new field investigations employing more detailed methods should clarify the issue of the eventual appearance of weights in settlement site layers of hillforts. But it is also necessary to have a better understanding of the economic bases of the Great Moravian state.

28 Szameit 1995, 279, fig. 2.
29 Marešová 1976, 85, fig. 12:16.
30 *Ibid.*, 85-86.
31 Hrubý 1955, 462.
32 Galuška 2004, 111.
33 Hrubý 1955, 114-115, fig. 13.
34 Cf. Steuer 1987; *idem* 1997, 11.

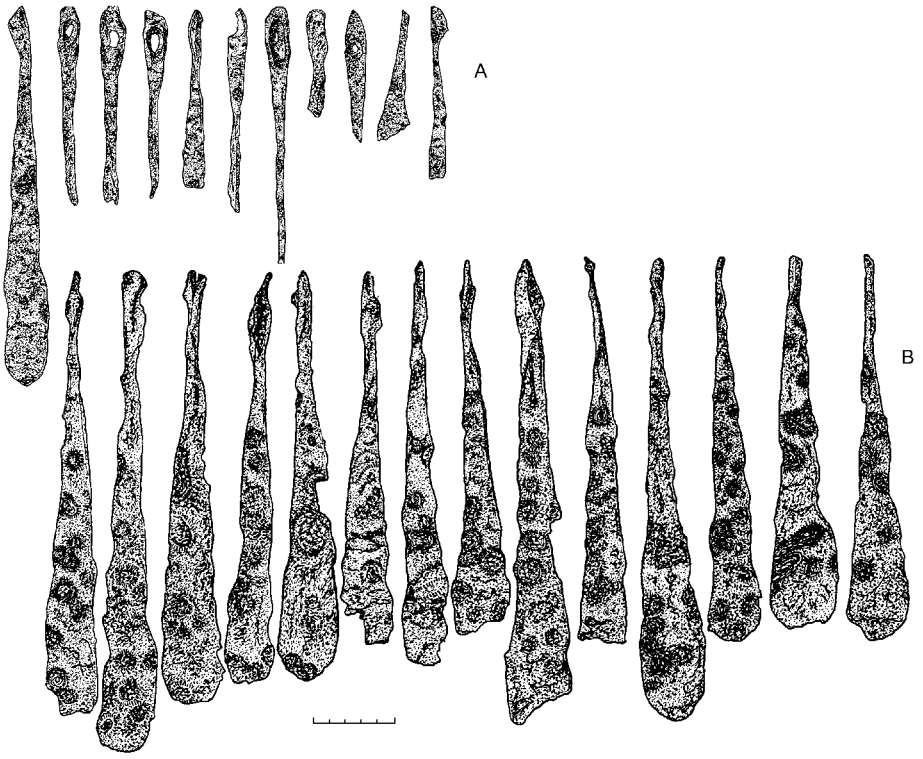

Fig. 3. Axe-shaped ingots from two hoards of iron objects: A. deposit by the Vth church on the *acropolis*; B. hoard in VIIIth church choir in the area beneath the walls

We can assume that in the internal market of Great Moravia, simple exchange and trade based on pre-monetary means of payment prevailed. Despite all objections, we can take into consideration iron-made axe-shaped ingots, or textiles – small pieces of fabric. Contrary to textiles, preserved only exceptionally, archaeological finds of axe-shaped ingots are very frequent. They are concentrated in the Great Moravian centres; the biggest collection comes from the hillfort of Pobedim in Slovakia.[35] They occur in various sizes and shapes and are found in different conditions – complete, partial, or quite fragmentary. In hoards, the whole series of axe-shaped ingots that had originally been stored in bunches can be found (Fig. 3). The weight of the ingots is comparable to that of the Byzantine pound, thus providing an estimate of their value at that time.[36] The significance of textiles (small pieces of fabric) as a means of payment can only be conjectured. Existing indications – Ibrahim ibn Yakub's report on the use of these means of

35 Bialeková 1990, 111-112.
36 Pošvář 1963, 3-4, 8-9; Dostál 1983, 196-197; Bialeková/Tirpáková 1989, 94.

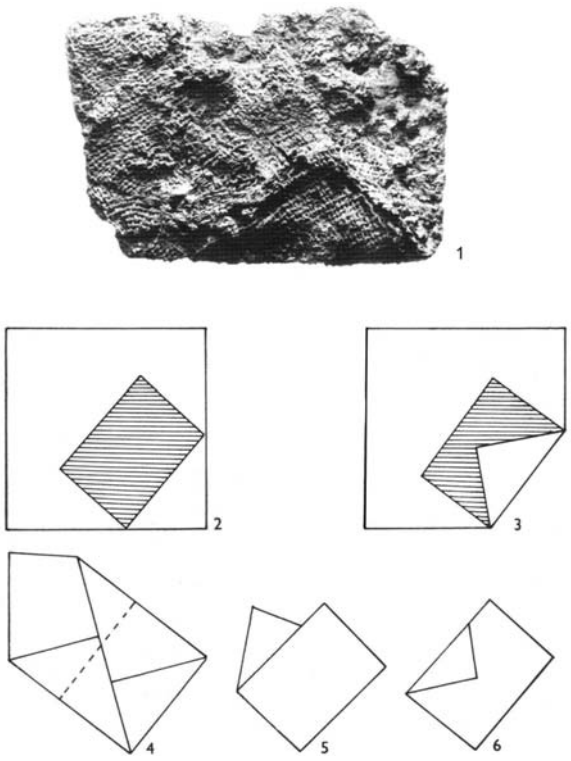

Fig. 4. Uherské Hradiště-Sady, cemetery "Horní Kotvice". Textile scarf and a way of its folding. Hatch – iron little plate 5 x 3 x 0,15 cm, folded in the little scarf

payment in Prague in the second half of the tenth century, followed by the find from the grave of the ninth century in the graveyard "Horní Kotvice" at Uherské Hradiště-Sady (Fig. 4), would require supporting evidence from other finds and detailed analyses.[37]

The important evidence of long-distance contacts are archaeological finds of foreign origin in Great Moravian settlements and cemeteries. The problem lies in the inexact interpretation of imports among the archaeological finds and in the difficult identification of potential market locations. The foreign origin of an object does not provide satisfactory evidence for its connection with trade; it could have been a gift, spoils of war, a lost object, or a personal object brought by a foreigner. As an evidence of trade in archaeological material mainly those objects of foreign origin that exist in multiple examples or whole series can be considered. Yet in the areas of the Great Moravian centres, such finds are relatively rare. On the other hand, there is a large group of objects, the origin of which is unclear, represented by objects of artisanal handicraft produced in home workshops on the basis of foreign patterns and influences.

37 Cf. Marešová 1976.

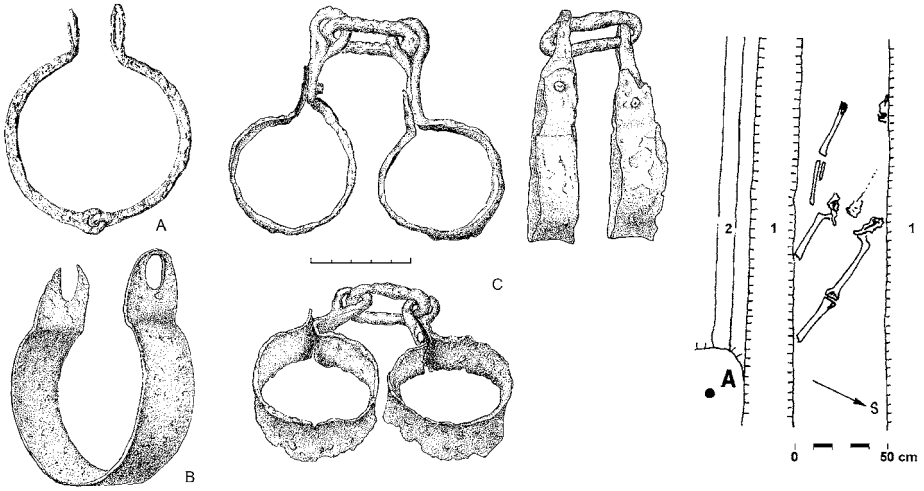

Fig 5. Shackles linked to trade with slaves. A. hillfort Brno-Líšeň – "Staré Zámky", deposit find of iron objects; B. hillfort Chotěbuz-Podobora near Český Těšín, settlement object Nr. 96; C. Staré Město, cementery "Na Valách", grave 1/97

We primarily find items issuing from Frankish workshops among weapons, riding equipment and products of artisanal handicraft in general. They include certain types of swords, lances, fighting knives (saxes), spurs, stirrups and fittings on belts. Glass products – funnel-shaped goblets and certain types of beads – might originate from workshops in the Rhineland. Scholars investigate the origin of certain jewels and decorations as well as luxury textiles – brocade and silk – in the East and Byzantium. From these lands other commodities came as well, including spices and pharmaceuticals. Textiles, glass and some products of artistic handicraft might also have originated from Italy. Jewellery production required the importation of precious and coloured metals – gold, silver, copper, tin and lead. The same applies for precious stones, amber, sea pearls, or mollusc shells – however, their occurrence is not frequent in the Moravia of the ninth century.[38]

The identification of specific objects of foreign origin is an issue of detailed processing of numerous finds from Great Moravian hillforts, mainly from rich cemeteries. It is significant that in connection with the long-distance trade, the Great Moravian centres had been supplied by luxurious goods designated for the nobility. "Ordinary" goods, such as millstones from Eifel Basaltlava spread out in Western and Northern parts of Europe, are entirely missing. Maybe the only exception is salt; its importation into

38 On imported wares generally, Jankuhn 1968; Poulík 1970; *idem* 1986, 53-54; Charvát 1998b, 44; Poláček 2000; Bialeková 2002, 104; Galuška 2004, 107-110.

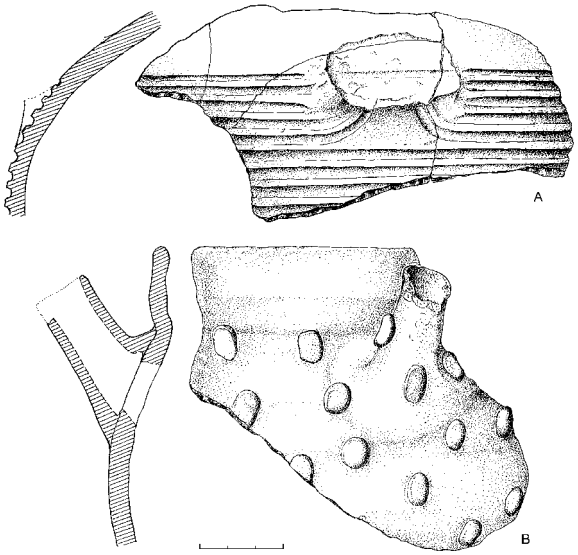

Fig. 6. Mikulčice-Valy, *acropolis* (A), dried-up river bed to the west of the bailey (B). Fragment of a Byzantine(?) amphora (A) and a jug of "thick glazing pottery" from the area of Rome (B)

Moravia has been documented in written reports. Finds of foreign pottery are scarce. They are represented only by single pieces of vessels, which might have been brought as containers for other goods (Fig. 6). Even though we look for the origin of certain types of weapons, glass and artistic handicraft products in the Rhineland, at Mikulčice no sign of Badorf or Pingsdorf pottery has been found.

It is peculiar that individual types of imported items (or better to say finds of foreign origin) occur in Great Moravian centres only as single pieces. So far, two items were found in larger quantities: glass funnel-shaped goblets at Mikulčice (Fig. 7.A)[39] and artefacts of silk from rich graves at Mikulčice, Staré Město, Břeclav-"Pohansko", Nechvalín and other cemeteries.[40]

It can generally be said that the area of the origin of the above listed imports is most frequently the Carolingian Empire, Italy, Byzantium and the eastern Mediterranean (Figs 6-9). On the other hand, finds from the Baltic or Scandinavian lands are quite rare. Admittedly amber occurs, but it involves only several beads individually used in necklaces from Great Moravian sites.[41]

It is necessary to connect trade mainly with numerous and widely attested artefacts or raw materials. It remains uncertain if that is applicable even to millstones, whetstones or whorls, i.e. stone-made products found in large quantities at Mikulčice and other centres of Great Moravia. The absence of suitable raw materials in the close vicinity of Mikulčice was a reason for transporting stones or finished products over relatively

39 Himmelová 1995, 87.
40 Kostelníková 1973, 8-9; Klanica 1997, 54.
41 Cf. Mrázek 2000, 55-59.

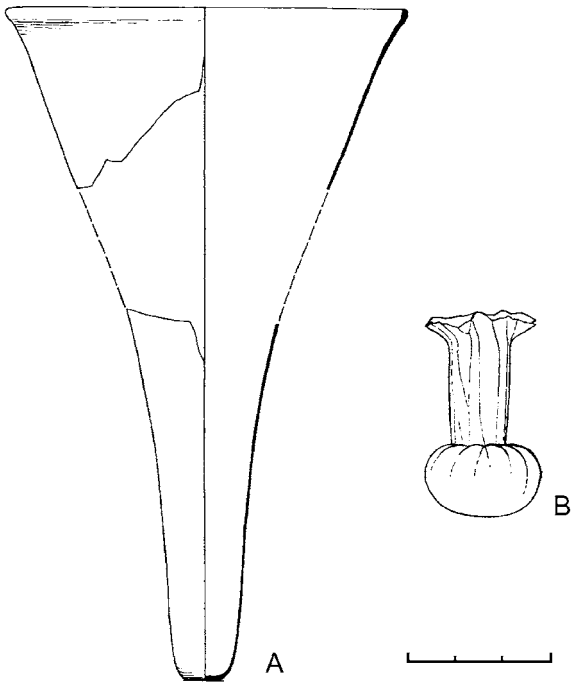

Fig. 7. Mikulčice-Valy, grave Nr. 398 by basilica (A) and the settlement layer by XIIth church (B). Fragments of the Carolingian glass goblet, rec. height ca 154 mm (A) and a little glass lamp, apparently from Syria; preserved height 43 mm (B)

long distances – even exceeding 100 km (when it comes to millstones), and yet still within the territory of Great Moravia.[42] Thus the question remains: Was supplying the centres with such vital commodities not primarily influenced by the power structure of the state rather than by actual exchange? The same applies to building material that might have been extracted from quarries at the slopes of the White Carpathians not far from Mikulčice.[43] Mikulčice Castle could control the extraction of this important raw material and its distribution to other centres, e.g. Pohansko hillfort near Břeclav, where we can find the same petrographic composition of the building material.[44] None of the above mentioned cases of mass-occurring stone artefacts and raw-materials can be referred to as a commodity of the long-distance trade.

A special kind of building material that was often used at Great Moravian hillforts was Roman bricks. They were collected in the territory of former Roman camps at the Danube and sailed down the Morava River to the main centres of Moravia.[45] Even plates of polished porphyry found in several fragments at Mikulčice, Uherské Hradiště-Sady

42 Dohnal 2003.
43 Štelcl/Tejkal 1963, 1967.
44 Štelcl/Malina 1975, 232; Staňa 1997, 80-81.
45 Hochmanová-Vávrová 1957; Hrubý 1961; Musil 1997.

Fig. 8. Mikulčice-Valy, a disrupted grave NE from the basilica (?). Strap-end with glass imitation of almadite and pearls; it is potentially Byzantine in origin

and Staré Město, might have been of the same origin.[46] There is a low probability that this material was obtained through trade.

When we examine written charters for goods for export from Great Moravian territory, we find slaves, cattle, horses, wax – i.e. goods of mostly natural character. These commodities are difficult to identify in the archaeological sources. That is true in part of evidence of the slave trade. Contrary to the great importance of this trade stated by historians,[47] there exist only three archaeological finds of iron shackles from the Great Moravian territory (Fig. 5). In addition, two of them – the specimens from Chotěbuz-Podobora and Staré Město represent foot shackles, which represent shackles for prisoners. The only two-part neck shackle comes from a deposit found at Brno-Líšeň-Staré Zámky hillfort.[48] However, slave shackles could have been made of wood on a large scale.[49] Trade with slaves might have had significant economic importance for Great Moravia, but it is difficult to assume that it was such a foundational element of the state economy, as for example in Přemyslid Bohemia in the tenth century.[50] Moravian slaves were probably recruited from the ranks of war captives taken in campaigns against the pagans, which were not organized until Svatopluk´s reign, i.e. at the younger phase of the Great Moravian State.[51]

We must be careful in our interpretation of objects that are characteristic for the material culture of Great Moravia and occur in the periphery of the central territory of

46 Mrázek 2000, 29-30.
47 Třeštík 2001a, 104-109; McCormick 2002, 174-177; Lübke 2004, 103-105.
48 Staňa 1961, 115.
49 Henning 1992; McCormick 2002, 175.
50 Třeštík 2001a.
51 Galuška 2004, 112.

Fig. 9. Mikulčice-Valy, grave 580 at the main nave of the basilica. A globular button with smooth vertically ribbed surface, characteristic for Byzantium and Bulgaria. The whole series of similar buttons comes from graves at Uherské Hradiště-Sady and Staré Město-"Na Valách"

this state. These are for example axe-shaped ingots, Moravian beard-type axes and typical jewellery.[52] It is not always possible to connect those objects to export. The areas in which they are found are often those temporarily connected to Great Moravia at the time of its expansion in the second half of the ninth century. This phenomenon refers instead to issues of internal trade and power mechanisms of the state at that time. Even local centres of production of those objects on a "foreign" territory might be involved. The argument that these objects date back to the first half of the ninth century, i.e. to the time prior to the expansion of the Moravian State, is not substantiated, because possibilities for archaeological dating within the ninth century are quite limited.

The issue of the identification of market locations

The witness of archaeological sources to the localisation of market places is quite limited. As it has been previously mentioned, direct evidence of trade, such as coins, scales or weights in Great Moravia centres occur quite sporadically. Nor does the occurrence of axe-shaped ingots represent a clear proof of the location of a market, because ingots, apart from their function in exchange, might have also been used as a raw material for handicraft production. The spread of some 330 axe-shaped ingots from Mikulčice perhaps reflects even more than only trade activities. Finds are dispersed relatively evenly across all parts of the settlement complex, although we find most of them close to both gates of the *acropolis* (Fig. 12). That could be connected with trade activities, but with day-to-day activities carried out at these exposed locations of the hillfort as well. The significant concentrations are also represented by the discovery of four hoards – three on the *acropolis* and one in the areas beneath the walls.

Moreover, so far there is no evidence of a mass occurrence of imported goods bound to a certain limited area of the site settlement. This applies both to Mikulčice,

52 Dostál 1965.

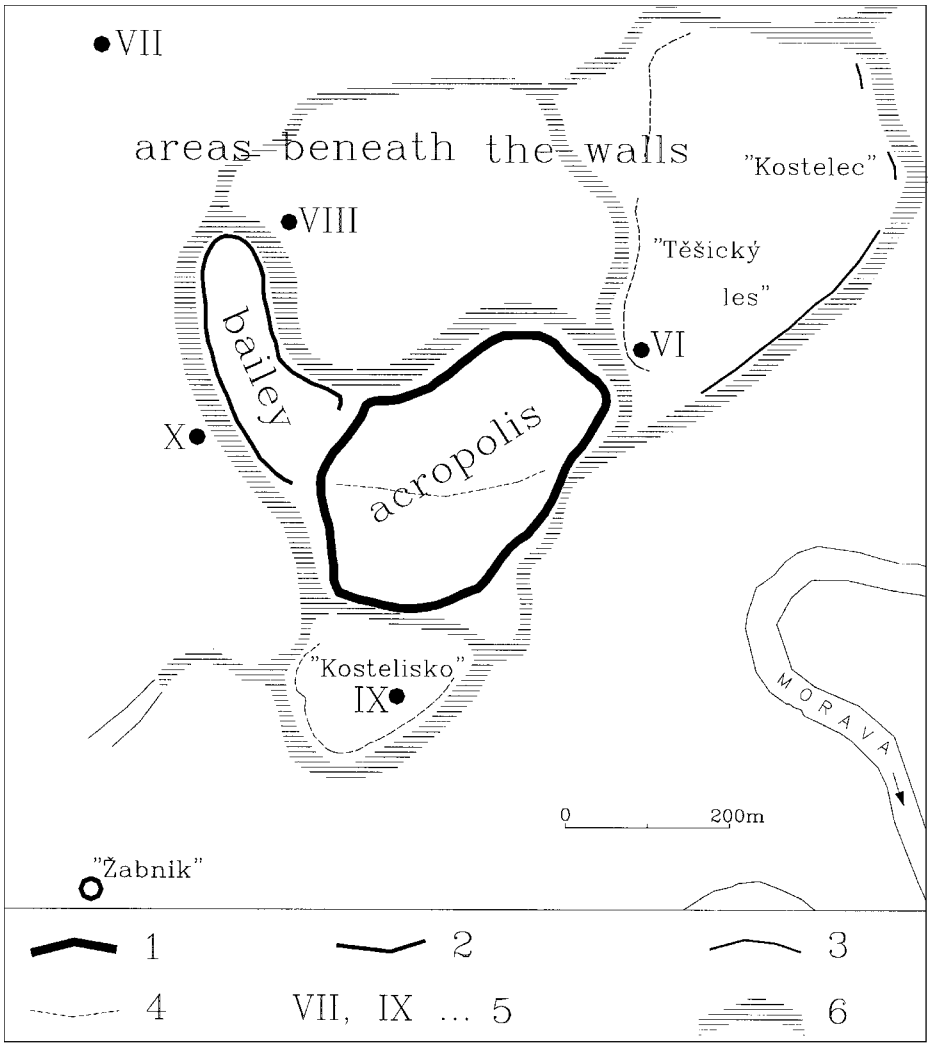

Fig. 10. Mikulčice-Valy (district Hodonín), hillfort. Schematic layout of the topographic situation. Legend: 1. the *acropolis* fortification; 2. archeologically proved fortification of the bailey; 3. earth embankment along the east line of "Těšický les" in the area beneath the walls; 4. field edges of raised parts on the *acropolis* and in the area beneath the walls; 5. established numbering of churches (indicated only churches in the area beneath the walls); 6. assumed course of river channels

and to other centres of Great Moravia. The present state of the investigations does not allow the identification of specific market places at hillforts, at least not to such an extent as would be similar, for example, to the archaeological picture of rather younger centres on the coast of the Baltic Sea. This does not mean that no trade or exchange existed here. On the contrary, it can be assumed that local markets existed at the majority of the hillforts. Their significance was proportional to the importance of the centre in the state apparatus.[53] If the market place had a limited extent, then it is necessary to look for it rather in the undeveloped areas of the settlement complexes.[54] The most probable locations involve baileys of the centres of power, and in the case of Mikulčice it might have been the areas beneath the walls. The question remains where trade with slaves took place. On the basis of existing investigations, it would be difficult to identify these areas more closely even though certain general criteria can be established.[55]

Written sources prove the existence of a regular market held close to one of the Great Moriavian centres and perhaps more centres. We know that the market in question primarily served the needs of exchange inside the Great Moravian Empire and that it was visited even by foreign merchants.[56] However, nothing points to the idea that they could have been centres of long-distance trade, comparable for example with the early medieval *emporia* at the coast of the Baltic and the North Sea.

The internal structure of the settlement complex at Mikulčice

The internal structure of the Moravian power centres provides us with the possibility of identifying the organisation of trade. Even though we struggle here with varying, usually quite unsatisfactory state of processing of large-scale investigations of the second half of the twentieth century, it is possible to suggest certain conclusions.[57]

Mikulčice used to be an island castle in the middle of the Morava River flood plane. The fortified core of the area of 10 ha consisted of the *acropolis* and the bailey (Fig. 10). Around the core, in the areas beneath the walls, other settlements were spread across the area of some 30 ha. The position of the three gates with adjacent wooden bridges indicates the line of the main communication axis of the castle. The most significant settlement areas developed on sand dunes.[58] The castle was surrounded by river channels, which were both of strategic and economic importance. Among others, it enabled shipping important for transport. A river port at Mikulčice has not been found; so far,

53 Galuška 2004, 106.
54 *Ibid.*, 106.
55 McCormick 2002, 176.
56 Třeštík 1973, 890.
57 Poulík 1975; Klanica 1985; Poláček 1996.
58 Havlíček/Poláček/Vachek 2003.

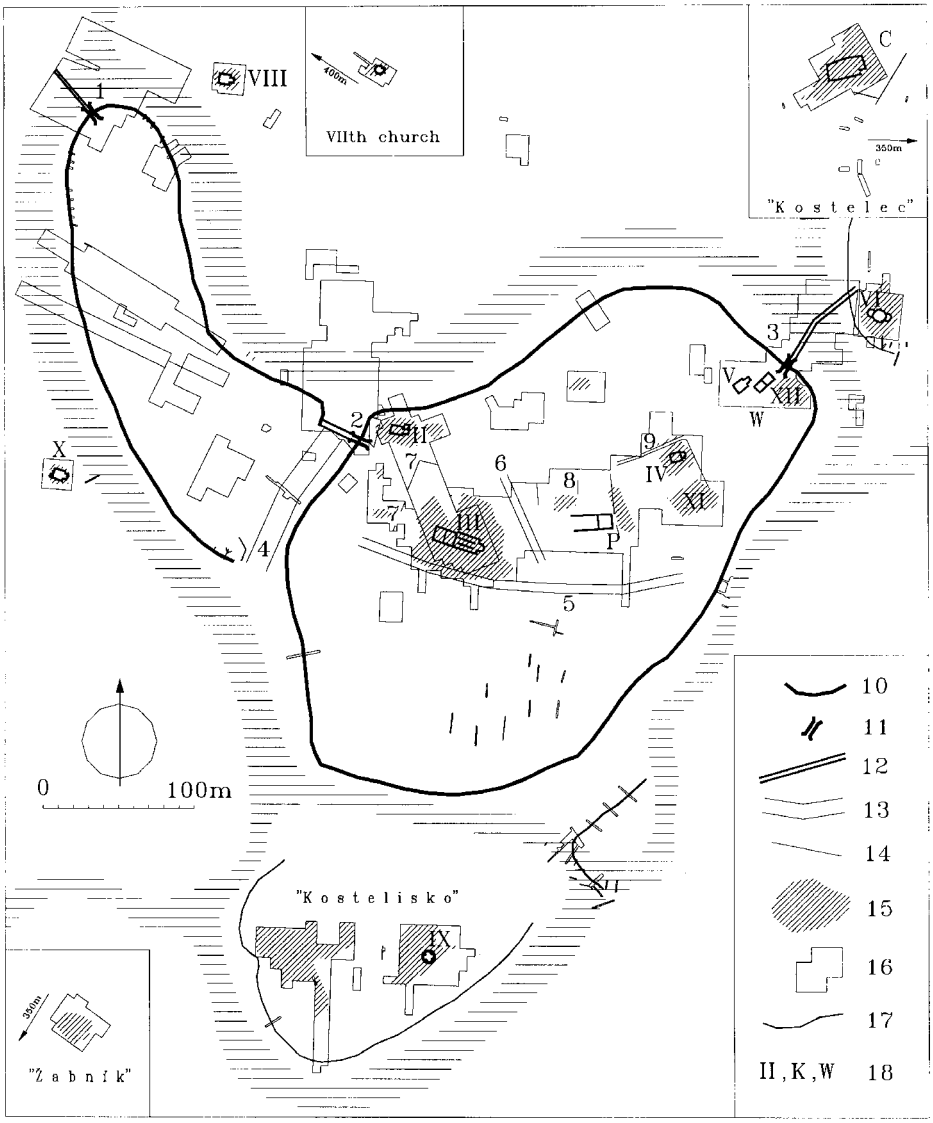

Fig. 11. Mikulčice-Valy, the hillfort of the ninth century. Ground plan of the hillfort with identification of the most significant objects: 1. north-west gate of the bailey; 2. western gate of the *acropolis*; 3. north-east gate of the *acropolis*; 4. ditch between the acropolis and bailey; 5. ditch south of the IIIrd church; 6. ditch between the basilica and palace; 7. palisade wall of the area around the basilica; 8. traces of palisade walls north of the palace; 9. road and fence of the area around the IVth church. Legend: 10. fortification; 11. gates; 12. bridges; 13. ditches splitting the internal area of the hillfort; 14. fences and palisades inside the *acropolis*; 15. graveyard or significant groups of graves; 16. investigated area; 17. significant field edges; 18. established numbering of churches identification of the palace on the *acropolis* (P), pagan temples in the place called "Kláštěrisko" (C) and jewellery workshops by the Vth church (W)

certain evidence of such a function is indicated by the barrier of the northern part of the water ditch between the bailey and the *acropolis*. The significance of shipping for Mikulčice has been proved by finds of dug-outs. Two bigger ones are some ten metres long and two fragments come from smaller boats. The existence of plank boats in Moravia in the ninth century is not supported by any actual finds.[59]

Due to large-scale archaeological investigation of the former river channels, remains of wooden constructions of bridges, bank barriers and other water constructions were found. The dendrochronological data from bridge piles represent the only exact data for Mikulčice.[60] They indicate a building of bridges perhaps in the 830s, which corresponds with the historically proven beginnings of the Great Moravian state. The castle of the ninth century was closely connected to the Pre-Great Moravia central settlement. The area of this settlement has a crescent shape and was situated in the northern part of the *acropolis* and the bailey of a later castle.[61] The central settlement of the eighth century, apparently fortified and with evidence of the existence of nobility, was destroyed by fire sometime in the late eighth or early ninth century, or during the first third of the ninth century. Then, construction on the Great Moravian Castle started.

The state of the processing of vast field investigations of the period executed between 1954 and 1992 enables us to identify functions of separated settlement areas of the Great Moravian Castle (Fig. 11). The existence of the palace and churches with graves in its interior indicate the main function of the *acropolis* as a residential place of the ruler or important duke. The more detailed function of at least five churches uncovered on the *acropolis* is unknown so far. Gradual construction of churches and extension of graveyards during the ninth century resulted in the displacement of common settlement objects from the *acropolis*. The whole southern zone of the raised northern part of the *acropolis* thus was changed into a sacral and funeral area. It is obvious that crucial structural transformations of the whole settlement area occurred at this time. Apparently in connection with the aforesaid fact, the settlement in the areas beneath the walls grew.

The common living houses are best preserved in the bailey, partly in the northern segment of the *acropolis*. There are represented by houses built on the surface of wooden logs or post construction. Mainly in the bailey this developed area presents a dense, regular structure, sometimes compared with organisation characteristic of a city.[62] In the southern half of the raised part of the *acropolis*, which was reserved for sacral purposes in the late ninth century, a continuous settlement and a richer stratigraphy is missing. On the other hand, we find remains of wall constructions or mortar floors of houses here, which can be somehow connected with function of churches – for

59 Poláček/Marek/Skopal 2000, 207.
60 Cf. Dvorská/Heußner/Poláček/Westphal 1999.
61 Klanica 1984, fig.2; *idem* 1995.
62 Poulík 1975, 135.

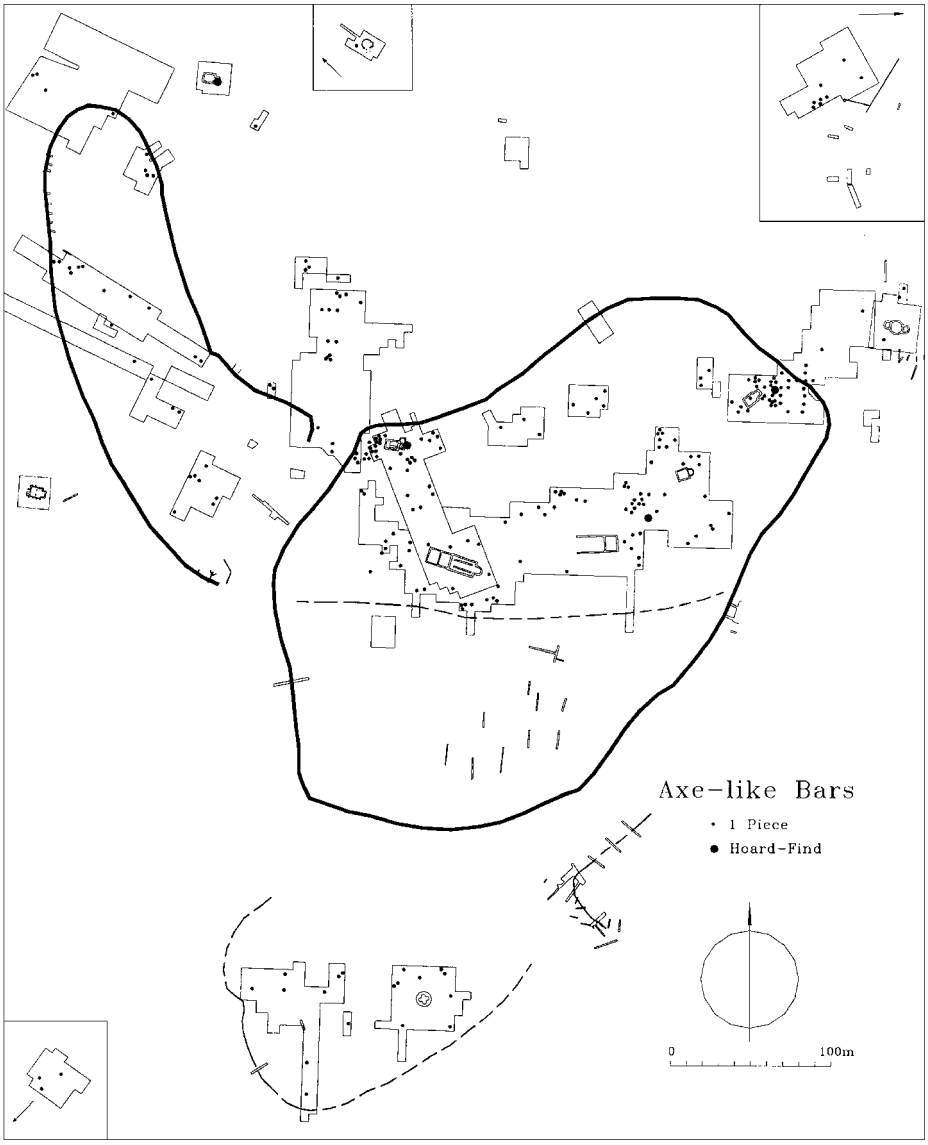

Fig. 12. Mikulčice-Valy, the hillfort. Preliminary mapping of axe-shaped ingots

example, as dwellings of clergymen. The wooden houses built up on the surface are characteristic even for settlements in the area beneath the walls. On the contrary, for the hinterland, pithouses situated some 1 km and more from the castle are typical.

Evidence of specialized handicraft production are concentrated both on the *acropolis*, and in the areas beneath the walls. On the other hand, there was an unspecialised home production, documented for example by finds of whorls (which are concentrated most densely in the bailey). It proves the very intense yet common housing function of this area. This interpretation of the bailey is supported by other tendencies including the absence of churches, cemeteries and specialized handicraft. The identification of the bailey as a seat of the military company of the duke[63] has been so far the most probable interpretation of this area. The presence of weapons, riding equipment and luxury objects in the settlement layer are similar for both fortified areas – the *acropolis* and the bailey – though perhaps more frequent for the *acropolis*.

On the basis of the investigated areas of Mikulčice, it is difficult to show a place or area that could be identified as a market place. Of course it is natural to pose the question if we are able to recognize such an area with the existing archaeological situation and finds. We must take into consideration the character of trade of that time, interpreting capabilities of archaeological sources in general and the applied methods of field investigations. Therefore, it is necessary to find and verify other criteria that would enable us to indicate trade activities within the archaeological context of the Moravian hillforts. Certain proposals of such criteria in connection with trade with slaves have been presented by McCormick.[64] The most suitable location for holding markets is underdeveloped areas beneath the walls. Unfortunately that area is the least investigated part of the Mikulčice settlement complex. It is worth mentioning that the only reliable find of a weight for small scales from Mikulčice comes only from the area beneath the walls as a result of fieldwork in 2004 (Fig. 2.D).

Mikulčice – together with settlement complex at Staré Město-Uherské Hradiště – used to be the most significant centre of Great Moravia. This has been proved by their extensive and structured site complex with long-term continuous settlement, numerous sacral buildings, rich graveyards and other typical features. They can be identified as central hillfort towns.[65] But today, it is impossible to state clearly which of them had been the royal seat of the Moravian Mojmírians. Each of the locations had common and quite specific features (Fig. 13.1-2). Mikulčice represents a strongly fortified castle situated on the river island in the middle of the river flood plane, characterized by a long-term, intense settlement. The complex in the area of Staré Město and Uherské Hradiště was not so intensively settled, but it exceeded the margins of the river flood plane while covering even adjacent terraces. As opposed to Mikulčice, which had limited

63 Poulík 1975, 135.
64 McCormick 2002, 176.
65 Staňa 1985, 162-167.

space, due to the range of raised sand dunes, the Staré Město settlement complex had unlimited possibilities for expansion.[66] We can mention one example to illustrate the importance of both locations. There are only two churches in Great Moravia in which a greater number of individuals are buried in the nave. One is at Mikulčice (basilica), and the other in the Staré Město-Uherské Hradiště settlement complex (ecclesiastical centre at Sady). If we admit that tombs in main areas of churches comprise individuals from the ruling family,[67] then looking for a sole capital of Great Moravia might be in vain. The determination of the historical importance of centres of Great Moravia depends above all on the critical processing of field investigations from the second half of the twentieth century. Only then will we be able to undertake a new historical comparison of these power centres.

Summary

- The vast scope of field investigations at the important Moravian hillforts, though limited in usefulness by the rough methods used, should provide a relatively representative archaeological picture, which is necessary for evaluation of the Moravian trade in the ninth century. The main problem lies in the unsatisfactory level of processing.

- The recognition of the Moravian trade structure is complicated because we lack direct evidence of trade. Coins are only seldom found; bronze scales for coins and precious metals, as well as weights, are scarce. Objects of foreign origin are generally represented by single pieces of luxurious goods; so far, only glass goblets from Mikulčice or silk from rich graves were found in greater quantities.

- The Moravian State of the ninth century did not mint its own coins. Byzantine golden solidi, and possibly Carolingian denarii, might have been in circulation. Everything points to the fact that the Byzantine monetary and weight standard was generally applied. Even though there exist certain finds of golden strips from graves, trade – which would have employed a weight-based monetary system – was not extensive. On the other hand, pre-monetary means of payment – axe-shaped ingots and perhaps small pieces of fabric – were used, especially in internal trade. We can take for granted that a simple exchange of goods was the most common means of trade.

- The most significant information on the long-distance trade is provided by written sources. They refer to the import of salt, perhaps of weapons, and the export of slaves, cattle, horses and wax. Trade with slaves probably played an important role, but it could not have been a long-term support of the economy of the Great Moravian State.

66 Poláček 2001, 321.
67 Schulze-Dörrlamm 1995.

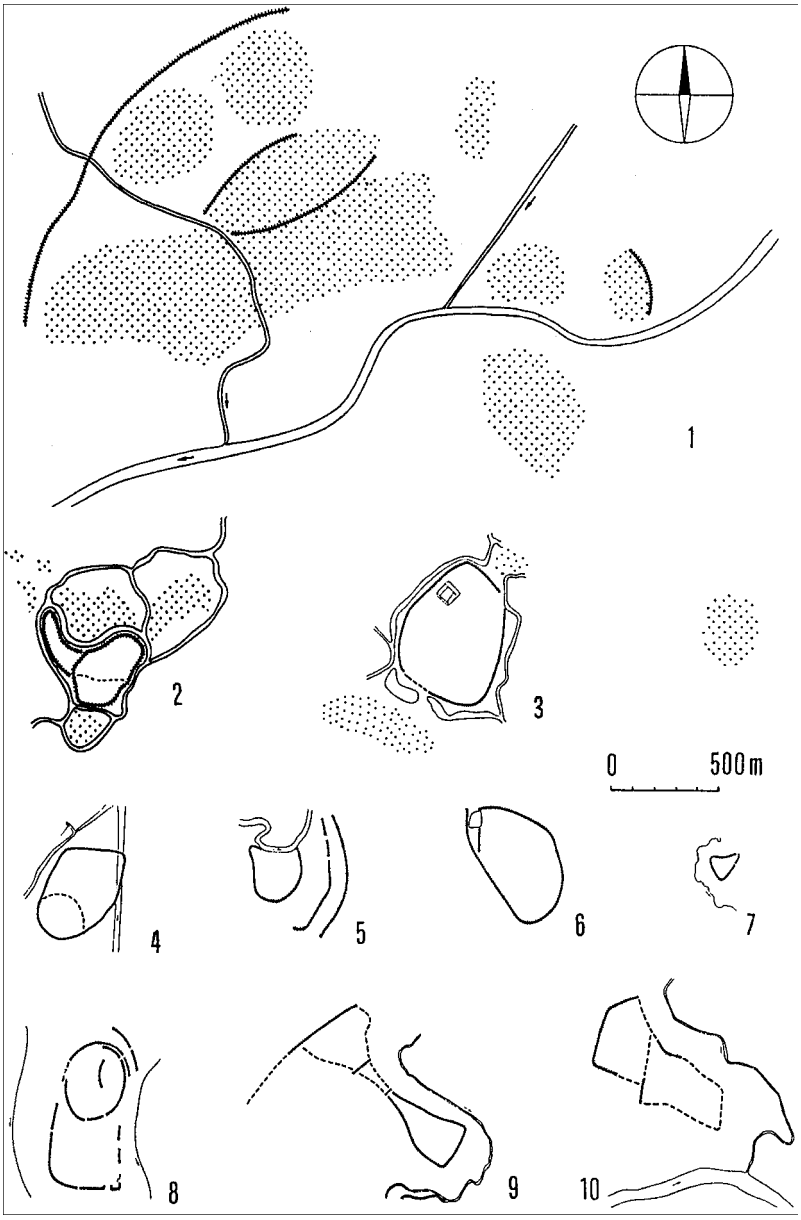

Fig. 13. Schematic ground plans of the key Moravian centres of the ninth century. The settlement area indicated by dots. 1. Staré Město-Uherské Hradiště; 2. Mikulčice-"Valy"; 3. Břeclav-"Pohansko"; 4. Rajhrad; 5. Nejdek-"Pohansko"; 6. Strachotín-"Petrova louka"; 7. Radslavice-Zelená Hora, Osvětimany-"sv. Kliment"; 9. Brno-Líšeň-"Staré Zámky"; 10. Znojmo-"Hradiště"

- On the basis of the archaeological sources, it is impossible to identify specific market places. Yet that does not mean that they did not exist. It is necessary to look for evidence of trade in finds, find contexts and the internal structure of the centres. It is probable that markets existed in the areas of the main Moravian centres of the ninth century.

- On the basis of the archaeological sources the assumed localisation of the "Market of the Moravians" at Mikulčice can be neither confirmed nor rejected. That market (or markets) can be considered to be the internal market of Great Moravia, which was visited by foreign merchants, but not as a centre of the long-distance trade. When comparing it with the trade operated at the *emporia* at the coast of the North and Baltic Sea, the long-distance trade at Great Moravia was substantially smaller in quality and quantity.

- The understanding of the trade structure should involve a broader study of the economic bases of the Great Moravian State.

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Ein frühmittelalterliches Grubenhaus von Bielovce (Slowakei): Befund und Rekonstruktion*

Gabriel Fusek

Die Gemeinde Bielovce liegt im unteren Eipeltal, in ungefähr 23 km Entfernung von der Mündung der Eipel in die Donau. Die Eipel bildet hier die Grenze zwischen der Slowakischen und der Ungarischen Republik. Im Zusammenhang mit der Regulierung des Flußlaufes erfolgte im Jahre 1985 eine archäologische Rettungsgrabung südwestlich der Gemeinde in der Flur Telek (Abb. 1). Die Fundstelle liegt auf einem niedrigen Sporn, einem Ausläufer des Eipelhügellands in die Eipelaue. Er überragt das Inundationsgebiet um etwa 1 m mit 114 m über NN. Vor den Regulierungsarbeiten umfloss die Eipel den Sporn auf drei Seiten. Das Bodensubstrat besteht im Überschwemmungsgebiet aus Auensedimenten. Direkt auf der Fundstelle kommen Lösse bzw. Lösslehme vor, die mit degradierten Schwarzerdeschichten durchsetzt sind. Die Bodengüte ist als sehr gut charakterisiert.

Die Untersuchung wurde durch die Anlage eines neuen Flussbettes veranlasst, bei welcher der natürliche Mäander quer durchschnitten wurde. Der Lehmabbau erfolgte durch Abbaggern entgegen der Flussrichtung. Durch die Abgrabung wurde der Südteil der Fundstelle zerstört. Vor Beginn der archäologischen Grabungen waren bereits etwa zwei Drittel des geplanten neuen Bettes ausgehoben. Bei der Rettungsgrabung wurde nur die unmittelbare Flächentrasse untersucht. Aus dem Erdaushub wurde ein Damm errichtet, aus dem archäologisches Material in Form von Lesefunden geborgen wurde, das belegt, dass der Sporn in der Vergangenheit auch im Bereich der gestörten Fläche besiedelt war. Der östliche, linksseitige Teil der Fundstelle gehört heute bereits zu Ungarn.

Während der Rettungsarbeiten wurden auf der Fundstelle Siedlungsobjekte aus verschiedenen Zeitabschnitten erkannt: aus dem Neolithikum (Želiezovce-Gruppe), dem Mitteleneolithikum (Badener Kultur), der jüngeren Bronzezeit (Čaka-Kultur), der Latènezeit (Stufe LT B) und aus dem Mittelalter (10. bis 11. Jahrhundert). Es wurde der Torso einer mittelalterlichen Ansiedlung nachgewiesen, bestehend aus einem Grubenhaus, zwei Ofengruppen, einem Brunnen und mehreren Gruben unterschiedlicher Funktion.

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* Im Anschluss an den hier veröffentlichten Tagungsbeitrag wurde die frühmittelalterliche Siedlung von Bielovce ausführlich publiziert: vgl. Fusek 2000.

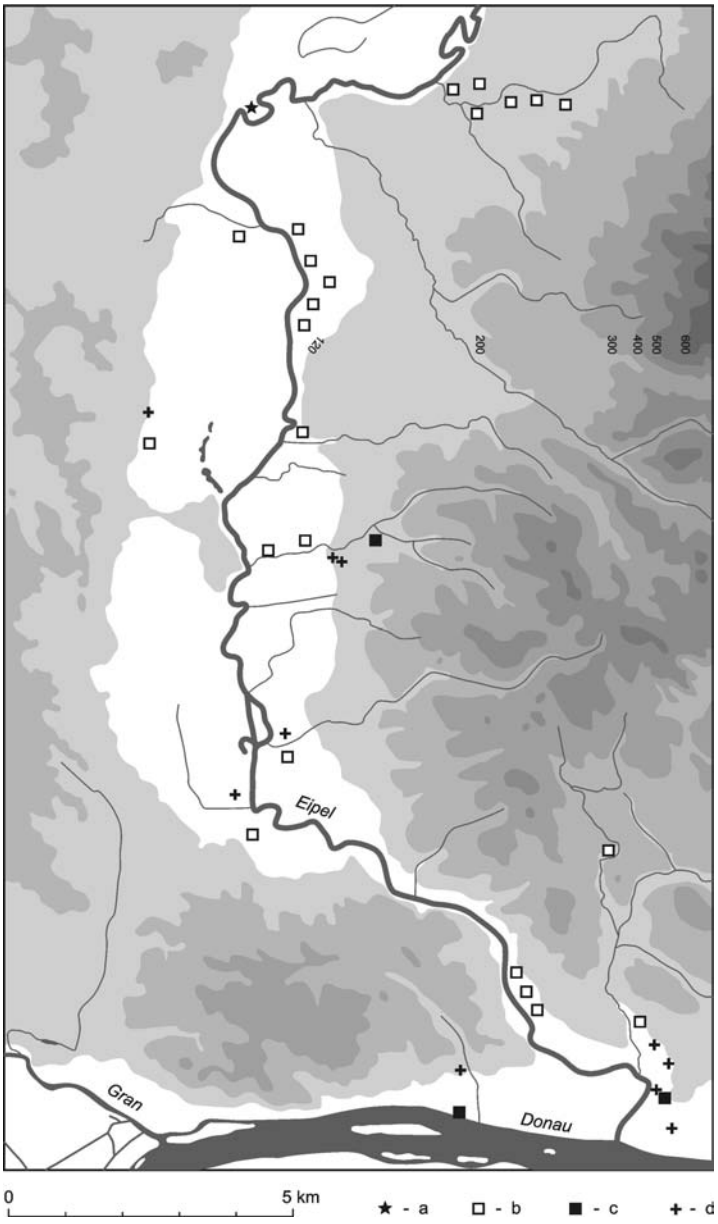
Bei der Abtragung der Humusschicht wurden in dunkelbrauner Erde Stücke gebrannten Lehms, Holzkohle und eine Steinsetzung gefunden (Abb. 2). Nach der vollständigen Freilegung wurde klar, dass es sich um Reste eines Grubenhauses handelte, dessen Sohle in einer Tiefe von ca. 1 m unterhalb des ursprünglichen Oberflächenniveaus lag und dessen Wandseiten annähernd nach den Himmelsrichtungen orientiert waren. Dieses Wohnhaus - Objekt 4 - wurde durch einen Brand zerstört, was zur Folge hatte, dass sich wegen der örtlichen Bodenverhältnisse ungewöhnlich viele Konstruktionsdetails erhielten, welche wiederum den Versuch einer Rekonstruktion seines ursprünglichen Aussehens ermöglichten.

Das Grubenhaus maß annähernd 3 m x 3 m. Im südwestlich Teil konnte in der Westwand eine etwa 30 cm breite Nische festgestellt werden. In der Ostwand, nahe der Nordostecke, fand sich eine Nische von 1,3 m Länge und einer maximalen Breite von 1 m, die wahrscheinlich zum Eingang gehörte. Sie befand sich auf der Höhe des Bodenniveaus des Innenraums. Der Nische gegenüber stieg der Boden im Bereich des Eingangs nur sehr mäßig an. Im Südostviertel fand eine Heizvorrichtung Platz. Im festgestampften Fußboden zeichneten sich in diesem Bereich zwei weitere Objekte ab. Das ältere von ihnen, das unregelmäßige Objekt 4B, wurde von der Grube 4A mit ovalem Grundriss geschnitten (1,22 x 0,90 m, Tiefe 40 cm). Die Verfüllung des Objektes 4A war die gleiche wie die des Objektes 4. Weil es die Füllschichten des Objektes 4 nicht störte und auf ihm kein festgestampfter Fußboden lag, bildete es offenbar einen Bestandteil desselben. Im Nordwest-Quadranten fand sich eine viereckige Einsenkung von bis zu 10 cm Tiefe. In der Nordostecke war eine ovaler Stelle mit durchglühtem Lehm erkennbar.

Während der Freilegung des Befundes wurde außer der Stelle der Eingangsnische auch eine 15-20 cm breite gelbe, lössartige Verfüllung entlang der Seiten des Objektes dokumentiert, deren oberes Niveau eine unregelmäßige Höhe aufwies. Ein Bereich an der Nordwand war hier bis in tiefere Bereiche durchglüht als an anderen Stellen. Der durchglühte Lehm ging allmählich in den nicht durch den Brand beeinträchtigten über (Abb. 3). Die Sohle unter dieser Einfüllung war gerade. Nur im Raum zwischen der Südwestecke und der Herdstelle verlief sie schräg und senkte sich von der Wand des Aushubs zur Sohle des Objektes hin. In der Nordwestecke zwischen der Wand der Grube und ihrer Sohle fand sich eine flache Stufe, begrenzt nach innen von der schon erwähnten viereckigen Einsenkung. Nahe der Öffnung des Eingangs befand sich eine 16 x 96 cm große und 8 cm tiefe rechteckige Vertiefung (Abb. 4a).

In die Sohle des Objektes waren elf Pfostengruben eingetieft.[1] Je eine besonders große und tiefe Grube befand sich an der Ost- und an der Westwand, eine lag links vom Eingang im Bereich der Wandmitte, die andere, gegenüberliegende war leicht exzentrisch an der Nahtstelle vom Innenraum zur Westnische eingegraben worden. In den

1 Ihre Tiefen auf der Abb. 4a sind vom Niveau der Objektsohle angeführt.



Legende: a. Bielovce-Telek, b. durch Geländebegehungen lokalisierte Siedlungen, c. Siedlungen, d. Gräberfelder

Abb. 1. Karte archäologischer Fundstellen aus dem 10.-11. Jahrhundert im unteren Eipeltal.

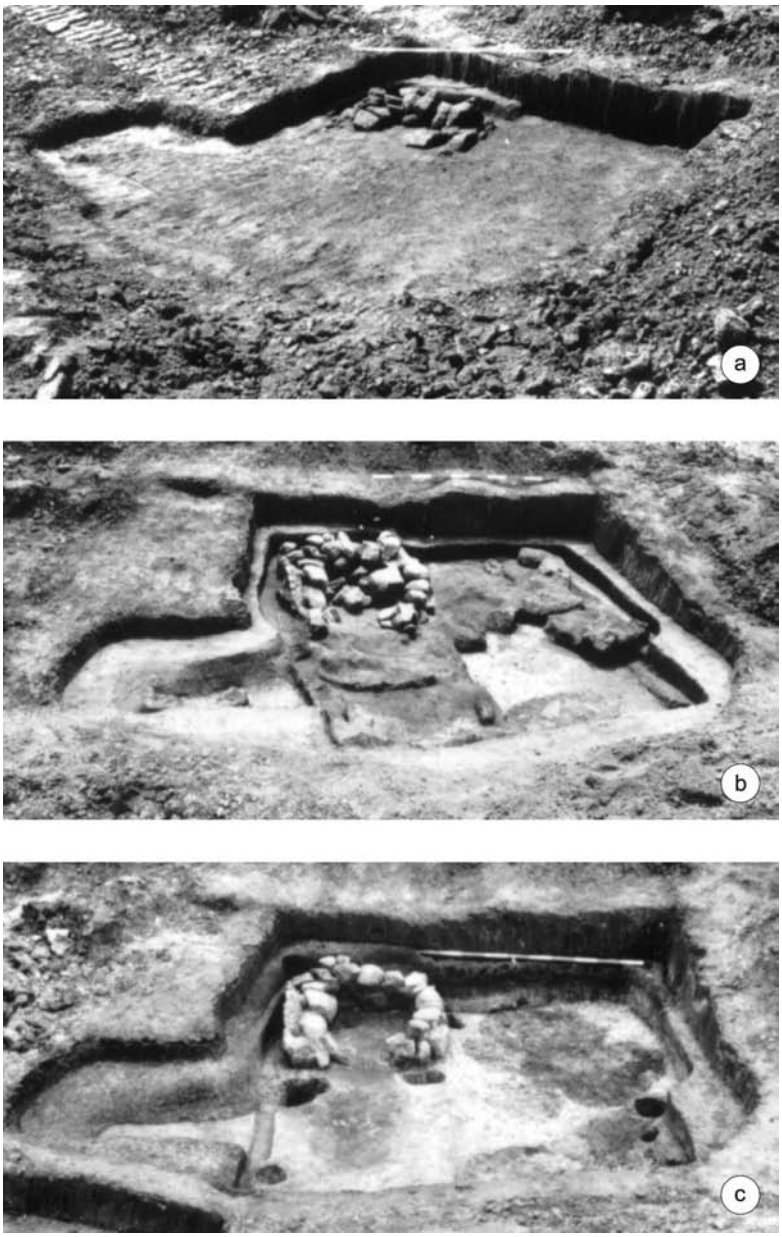


Abb. 2. Bielovce. Das Objekt 4 in verschiedenen Phasen der Freilegung

Ecken bei der Nordwand lagen zwei Pfostengruben mit nahezu gleichem Durchmesser. Eine ähnliche, aber flachere Pfostengrube, fand sich auch in der Südostecke, die sich aber über die Begrenzung des Innenraumes hinaus erstreckte. Die Pfostengrube links von der Ofenmündung berührte eine große Pfostengrube bei der Wandmitte. Rechts von der Mündung befanden sich zwei einander überlagernde Gruben. Eine weitere Pfostengrube war am Ansatz der Ofenrückwand an der Südwand des Objektes zu erkennen. Eine Pfostengrube von kleinem Durchmesser befand sich im Bereich der Nordwand des Objektes, eine weitere zwischen der Eckpfostengrube und der zentralen Pfostengrube der Westwand.

Ein Ofen, der 1,34 m x 1,20 m maß, nahm die Südostecke ein. Errichtet war er aus Bruchsteinen und Mahlsteinfragmenten mit Mörtel und Verputz aus Lösslehm. Sein verstrichener ovaler Heizraum maß 80 x 70 cm und verjüngte sich kuppelartig nach oben. *In situ* wurden zwei Steinreihen festgestellt. Die obere war etwas nach innen verschoben. Die Ofensohle bestand aus einer Schicht kleiner, mit Lehm verbundener Flusskiesel. Der vordere Teil des Ofens war ausgebessert, was zwei ausgebesserte Verputzschichten bezeugen. Auf dem Estrich lag eine Ascheschicht. Die östliche Außenwand des Ofens war bis in eine Höhe von 40 cm erhalten. Sie war nahezu senkrecht, leicht nach innen geneigt und teilweise durchglüht.

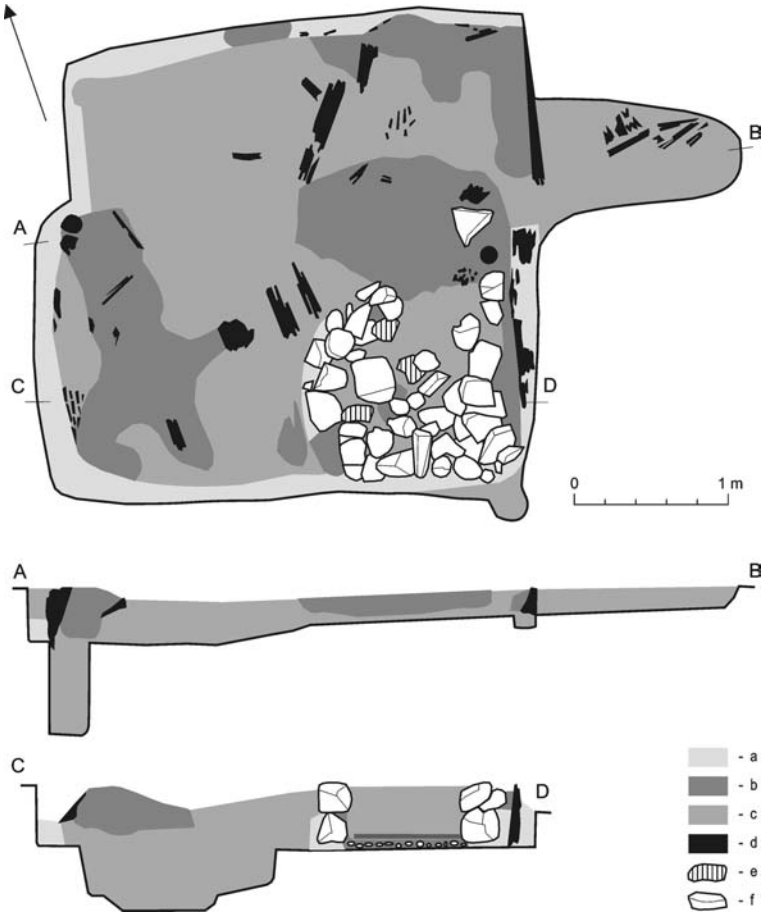
Die Verfüllung der Hausgrube bestand aus dunklem Lehm. In ihr fanden sich Lössklümpchen, Lehmverputzbrocken, kleine Holzkohlestücke und größere verkohlte Hölzer, kleinere Steine, Scherben, Tierknochen und weitere kleinere Gegenstände. In der Osthälfte und in der Südwestecke war sie durchsetzt mit Schichten von rotgebrannter lockerer Erde, in der sich verkohlte Holzreste fanden.

Die verkohlten Holzstücke waren über die ganze Fläche des Objektes verstreut (Abb. 4b). Unter den analysierten Holzfunden überwiegt die Eiche (*Quercus spec.* - 7 Proben), es kam auch ein größeres verkohltes Stück Pappel (*Populus spec.*) vor und je einmal Hagbuche (*Carpinus betulus*) und Hasel (*Corylus avellana*). Die Holzkohlestücke der Hagbuche stammten von jüngeren Bäumen, im Falle der Hasel handelte es sich um dünne Ruten. Der Rest des Pappelholzes besaß einen Durchmesser, der den der Pfostengruben übertraf, er muss demnach zu einem größeren Holzgegenstande gehört haben.[2]

Bei den gefunden zoologischen Resten dominieren Rinderknochen. Es fand sich auch je ein Knochen vom Schwein und vom Haushuhn.[3]

Wegen des Fehlens von anderen, chronologisch aussagefähigeren Funden muss sich die Datierung des Objektes 4 auf die gefundenen Keramikscherben stützen, die von topfförmigen Gefäßen stammen (Abb. 5,1-12). Die Ränder sind gerundet, schräg abgestrichen, manchmal auch eingebogen. Eine Mündung ist an der Innenseite ver-

2 Hajnalová 1986, 90.
3 Ambros 1986, 25.



Legende: a. gelber Lösslehm, b. rotgebrannter Lehm, c. dunkler Lehm, d. verkohltes Holz, e. Mahlstein, f. Stein

Abb. 3. Bielovce. Grundriss des Objektes 4 im Festetellungsniveau und Profile.

ziert. Unter den auf dem Gefäßkörper angebrachten Verzierungselementen überwiegen die mit einem zackenlosen Instrument eingeritzten Ornamente. Größtenteils handelt es sich um umlaufende Linien, kombiniert mit einer Wellenlinie, mitunter kamen auch kurze und lange Schrägkerben zum Vorschein. Wellenbänder und mehrteilige Linien, die mittels eines kammartigen Werkzeuges eingeritzt worden waren, sind selten. Eine horizontale plastische Leiste mit verdickten Rändern war auf einem aus Graphitton hergestellten Gefäß aufgebracht.

Von Bedeutung für die chronologische Bestimmung ist die deutliche Abnahme der Kammstrichverzierung sowie das Vorkommen der kurzen Kerben und die bereits erwähnte Scherbe eines Gräphittongefäßes mit aufgelegter Leiste. Es handelt sich um

Verzierungselemente, die in das 10. und 11. Jahrhundert datiert werden. Aus dem nahen unteren Grantal, z.B. aus dem älteren Horizont der Siedlung Cénapart in Bíňa[4] und aus Kamenín[5], stammen Funde ähnlicher Charakteristik und Zeitstellung.

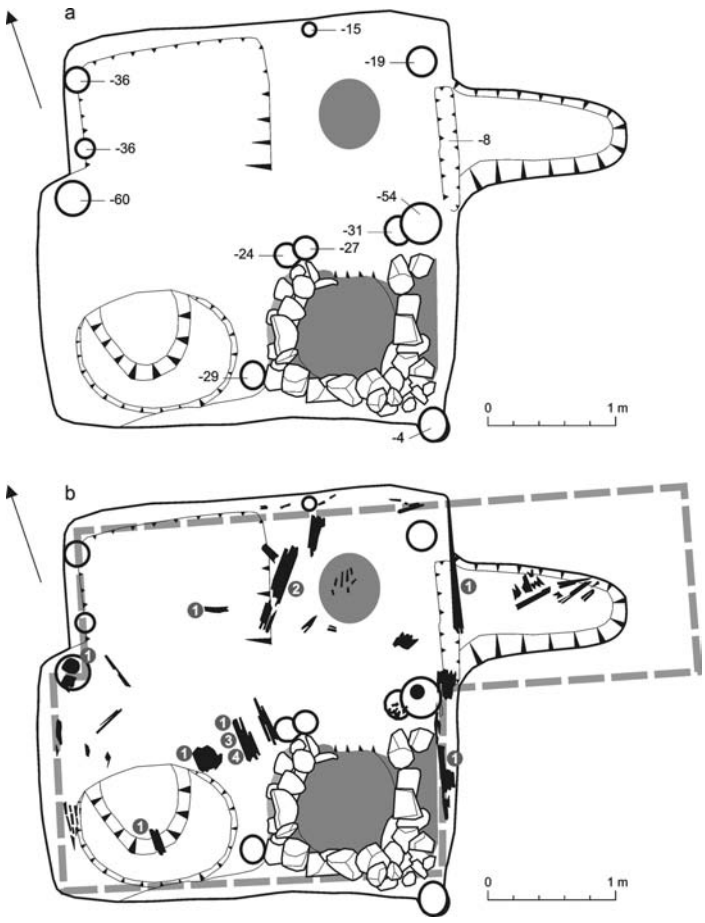
Den bisher bekannten Fundstellen zufolge war das untere Eipeltal im 10. bis 11. Jahrhundert verhältnismäßig dicht besiedelt (Abb. 1). Siedlungen sind hier vor allem aus Begehungen bekannt. Auf den untersuchten Gräberfeldern fanden sich überwiegend Artefakte, die für die Bijelo-Brdo-Kultur typisch sind. Aufgrund dieser Erkenntnisse ist davon auszugehen, dass das ursprünglich von einer slawischen Bevölkerung bewohnte Gebiet im 10. Jahrhundert von Angehörigen des magyarischen Ethnikums besiedelt wurde. Auf das Zusammenleben beider Bevölkerungsgruppen weisen archäologische und sprachwissenschaftliche Quellen hin.[6]

Grubenhäuser mit quadratischem Grundriss und einer für gewöhnlich in einer Ecke liegenden Heizanlage sind im Frühmittelalter für das von Slawen bewohnte Gebiet typisch.[7] Die Kenntnis ihrer Bauweise ist im slowakischen Gebiet und allgemein für den Mitteldonauraum bereits seit dem 6. Jahrhundert belegt,[8] später dominieren ähnliche Bauten auch im Gebiet des awarischen Khaganats,[9] des weiteren in Großmähren und bis in das 13. Jahrhundert hinein auch im frühungarischen Staat[10]. Jedoch ist von Anfang an in der regionalen Bautradition eine gewisse Differenzierung zu erkennen.[11]

Aus ungarischen Schriftquellen des 11. und 12. Jahrhunderts ist ersichtlich, dass die Dorfbevölkerung in dieser Zeit außer Zelten auch Hütten bewohnte. Im Falle der ungarischen Landnehmer verweist die Benutzung solcher Bauten auf einen permanent besiedelten Ort, auf einem Wandel in der Wirtschafts- und Lebensweise der ursprünglich nomadischen Bewohner, für die zuvor ein Wohnen in Zelten charakteristisch war. Seit dem Ende des 13. Jahrhunderts werden neben den Grubenbauten in den Schriftquellen auch Häuser erwähnt.[12] Die Schriftquellen informieren aber nicht über das Aussehen, die Größe oder die Bauweise der Dorfarchitektur.

Bei der Rekonstruktion des Grubenhauses in Bielovce konnten wir nicht von einer Fundsituation mit Holzerhaltung ausgehen, wie sie z. B. aus sumpfigen Gebieten bekannt ist. Die bisher einzigen Bauten mit untersuchten Holzkonstruktionen aus dem 9. bis 13. Jahrhundert, es handelt sich hierbei um ebenirdische Häuser, wurden im Karpatenbecken in Fonyód-Bélatelep im Feuchtbodengelände unweit des Plattensees gefunden.[13] Ein pas-

4 Ruttkay/Cheben 1992, 109-134.
5 Nevizánsky 1982, 63-75.
6 Hanuliak 1994, 78.
7 Donat 1980, 56-69.
8 Fusek 1994, 128-131.
9 Zábojník 1988, 401-437, 480.
10 Mesterházy 1989, 291-198.
11 Šalkovský 1998, 32-33.
12 Horváth 1965, 127-134.
13 Ders. 1968, 114-144.



Legende: 1. Quercus spec., 2. Populus spec., 3. Carpinus betulus. 4. Corylus avellana

Abb. 4. Bielovce, Objekt 4.: a. Stand nach völliger Freilegung und Säuberung, b. Stand nach völliger Säuberung mit eingetragenen Lagen verkohlter Hölzer und rekonstruiertem Verlauf der Wände.

sendes Vergleichsmaterial zur Kenntnis der Bauweise der Häuser und der benutzten Zimmermannstechniken bieten die Fundsituationen vor allem im nördlichen slawischen Gebiet in Deutschland, in Polen und in Russland. Auch in diesen Fällen handelt es sich allerdings um Reste ebenirdischer Bauten. Aus Grubenhäusern sind vor allem verkohlte Holzkonstruktionen bekannt, die es in der Mehrzahl der Fälle nicht erlauben zu entscheiden, wie die Wohnhäuser erbaut waren.

Die Analyse der Holzkohlenstücke zeigte, dass bei der Errichtung des Objektes 4 in Bielovce vor allem Eichenholz benutzt wurde. Diese Tatsache überrascht nicht, weil dieses wegen seiner guten Eigenschaften als Baumaterial auch in anderen

Gebieten bevorzugt wurde.[14] Bei der Rekonstruktion gingen wir von der Erkenntnis aus, dass die Handwerkskunst des Zimmermanns bei früh- und hochmittelalterlichen Häusern ein verhältnismäßig hohes Niveau aufwies. Dies belegen die entdeckten Bauhölzer, die sorgfältig bearbeitet sind, oftmals der Länge nach gespalten und mit der Axt geglättet waren. Die Technik ihres Zusammenfügens ist sehr vielfältig, es kommen Einkerbungen, Nute, Zapfen u. ä. vor.[15] Als Verbindungsmaterial dienten Holzstifte mit Kopf, die in vorgebohrte Löcher eingelassen wurden.[16] Manchmal schob man in das Bohrloch einen konischen Holzpflock, der mittels eines Holzkeiles aufgespaltet wurde.[17] Bekannt ist auch eine Querverbindung von Brettern mit einer schmalen profilierten Latte, die in einen konisch sich verbreiternden Einschnitt eingeschoben wurde.[18] Selten benutzt wurden Eisennägel oder -klammern, z.B. fand man im Objekt 4 von Bielovce nur je ein Exemplar (Abb. 5,13.14).

Eines der größten Probleme bei der Rekonstruktion des Grubenhauses von Bielovce ist die Bestimmung seiner Giebelhöhe bzw. der Höhe seiner Wände. Im weiteren wird davon ausgegangen, dass eines der Ziele des Eintiefens des Bodens eine bessere Wärmeisolation war. Daher kann vorausgesetzt werden, dass die Höhe der Holzverkleidung der Wände den Rand der Baugrube, die ursprünglich etwa 1 m tief war, nicht wesentlich überschritt. Dass das Grubenhaus in Bielovce ein Satteldach besaß, kann durch die Tiefe der Paare der großen gegenüberliegenden Pfostengruben (54 und 60 cm), in welche die Firstsäulen eingelassen waren, belegt werden. Die Dachsparren ruhten offenbar nicht direkt auf der Erde, sondern lagen auf Schwellbalken, die als Wandrahmen dienten. Zuzüglich ihrer Dicke von 15 cm würde die Höhe des Raumes nahe der Wand 1,20 m überschreiten. Bei einer Neigung des Daches von 45° würde die Wandhöhe im Bereich des Eingangs bereits etwa 2 m betragen. Schon in 40 cm Entfernung von der Längswand des Objektes betrüge die Raumhöhe mehr als 1,60 m. Im Falle der Richtigkeit der angenommenen Dachkonstruktion betrüge die größte Innenraumhöhe etwa 2,50 und entspräche sicherlich den Bedürfnissen der damaligen Bevölkerung. Die durchschnittliche Körperhöhe der Frauen auf dem unweit gelegenen, zeitgleichen Gräberfeld in Malé Kosihy war 1,55 m, die der Männer 1,64 m.[19]

Ein weiteres Problem für die Rekonstruktion ist die Frage nach der Bauweise der Wände. Unter dem Gesichtspunkt der Standfestigkeit hätte der Bau seinen Zweck auch ohne stabile Wandkonstruktionen erfüllen können. Der Befund im Zwischenraum der Ofenwand und der Ostwand belegt jedoch eindeutig die Existenz von Holzwänden. Auch der erwähnte farblich abweichende Lehmstreifen, der die Hausgrube umläuft,

14 Schuldt 1988, 11.
15 Ebd., 47-48.
16 Ebd., 31 Abb. 26.
17 Heidenreich 1983, 104 Abb. 56.
18 Zasurcev 1963, 42 Abb. 25.
19 Vondráková 1994, 59.

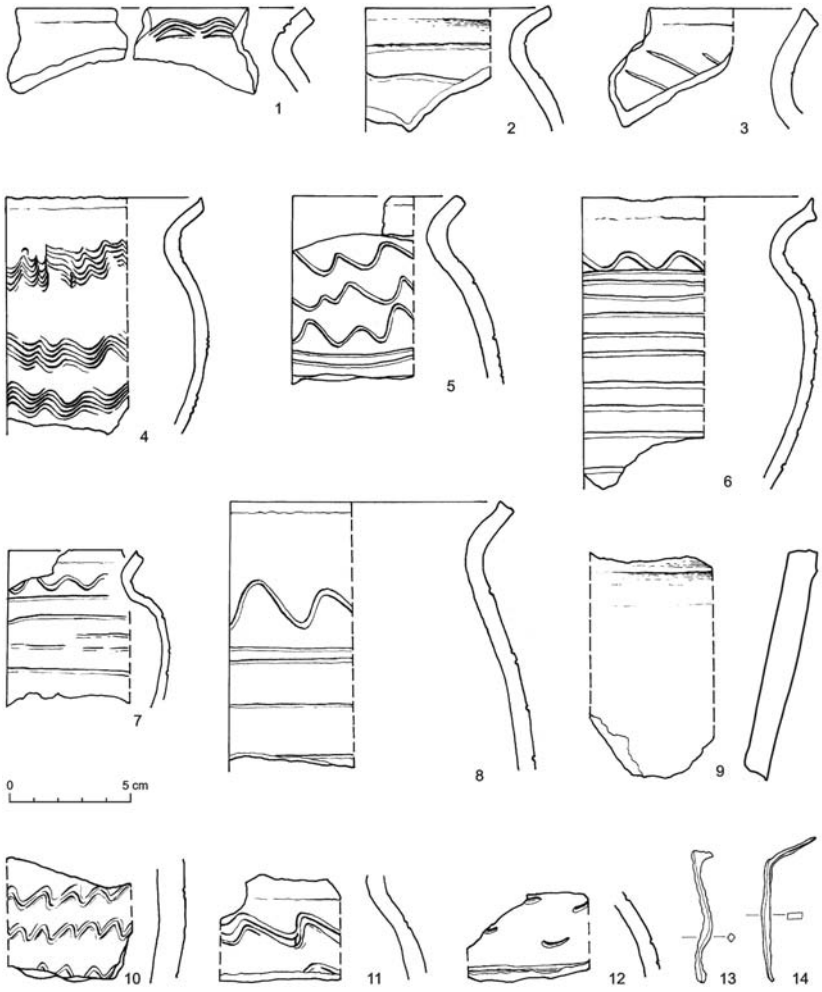


Abb. 5. Bielovce, Objekt 4. 1.-12. Auswahl von Keramikfunden, 13. Nagel, 14. Bauklammer

weist darauf hin. Es handelt sich um den Rest einer Verfüllung zwischen der hölzernen Wand und der Wand der Grube hin (Abb. 3).

Die erhaltenen Eckpfostengruben an der Nordwand deuten an, dass ein Blockbau nicht in Erwägung gezogen werden kann. Auch eine Einfügung waagrechter Bohlen in die Nuten der senkrechten Pfosten muss aus mehreren Gründen ausgeschlossen werden. So konnten in die etwas in den Innenraum versetzte westlichen Firstsäule, deren Mittelachse mit der Wandkante in der Nordwestecke korrespondierte, keine waagrechten

Balken eingeschoben werden. In gleicher Weise ergibt sich für die Verbindung zwischen der östlichen Firstsäule und der Südostecke ein Hindernis: hier befindet sich der Ofen. Weiter wäre die Vertiefung an der Stelle des Eingangs, die wir als Rest der Schwelle interpretieren, aus der Sicht einer derartigen Konstruktion in einer Weise vor die Verbindung zwischen der östlichen Firstsäule und dem nordöstlichen Eckpfosten geschoben, die keinen Sinn ergäbe. Das Fehlen eines südwestlichen Eckpfostens war offenbar gewollt, wie der an dieser Stelle ungestörte kompakte Verfüllungsstreifen bezeugt. In die nördlichen Eckpfosten können waagrechte Bohlen nicht eingelassen gewesen sein, worauf der Rand der viereckigen Vertiefung in der Nordwestecke hinweist.

Der Verlauf der Wände ist stellenweise genau bestimmbar. Er wird bestimmt durch die Linie der Ostwand des Ofens, weiterhin durch die Platzierung der Schwelle und in gleicher Weise durch die Nord- und Weständer der regelmäßigen Vertiefung in der Nordwestecke (Abb. 4a). Die Wände brauchten nicht auf dem ganzen Umfang genau senkrecht gewesen zu sein, was im Profil der Ofenostwand zu sehen ist. Die Holzwand senkte sich schräg zur Sohle in Richtung nach innen. Im Hinblick darauf, dass diese Ofenwand sehr hart und stellenweise durchgebrannt war und keine Spuren einer Verlagerung aufwies, halten wir dies für eine gesicherte Tatsache. Wegen des Fehlens von Lehmverputzresten mit Rutenabdrücken, können auch Flechtwände nicht in Frage kommen. Nach Ausschluss der angeführten Bauverfahren bleibt allein die Rekonstruktion der Hauswände aus senkrechten Hölzern übrig. Deshalb mussten die Wände in einer Art von Stabbautechnik errichtet worden sein.

Die rekonstruierte Lösung geht nicht allein von der konkreten Fundsituation aus, sondern ebenso von der Erkenntnis, dass eine solche Bauweise für das Früh- und Hochmittelalter von mehreren Fundorten her bekannt ist. Zum Beispiel wurde in Berlin-Spandau im Haus 3 aus der Phase 5a ein Schwellbalken mit längslaufender Nut für die Aufnahme senkrecht stehender Wandbohlen gefunden. Auf demselben Burgwall steckten in den Überresten des Hauses 2 aus der Phase 6a Reste senkrecht stehender Bretter.[20] In manchen Details ähnelt dem Grubenhaus aus Bielovce das Grubenhaus XIV aus Rýmařov, das in das 13. Jahrhundert datiert.[21] Die Fundamente der Wände in der Baugrube bestanden hier aus horizontal gelegten Bohlen, auf denen Lehmwände ruhten, die mit senkrechten Brettern verkleidet waren. Diese waren den Abdrücken im Lehm zufolge etwa 20 cm breit. Anders gebaut waren die Wände der Grubenhäuser aus dem 12. bis 14. Jahrhundert in Stare Bielsko, denn die senkrechten Bretterwände waren zwischen den horizontalen Bohlen und dem Rand der Baugrube eingeschoben.[22] Auf dem Burgwall von Novotrojickoje aus dem 9. Jahrhundert hat sich ein Bau mit

20 von Müller/von Müller-Muči 1983, 71-72, 76-77, Abb. 43.
21 Goš/Novák/Karel 1985, 197-199, Abb. 4.
22 Bartys 1939, 70-71, Abb. 10, Abb. 11, Taf. IV,a.

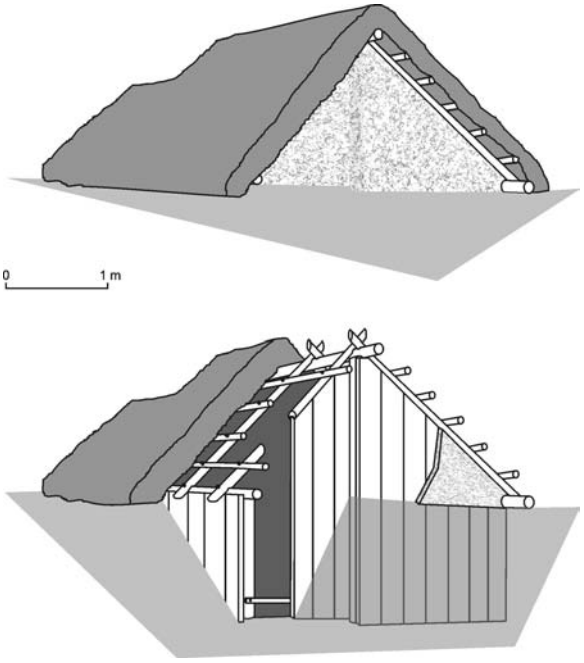


Abb. 6. Bielovce, Objekt 4. Rekonstruktionsversuch. Blick auf den rückwärtigen Teil des Grubenhauses

verkohlten Wänden aus vertikalen, 25-40 cm breiten Brettern in Fragmenten erhalten, die ursprünglich direkt auf dem Erdboden standen.[23]

Im Falle des Grubenhauses in Bielovce können wir die Befestigung der Unterteile der senkrechten Bauelemente in Fundamentbalken ausschließen, weil keine Spuren von solchen gefunden wurden. Als wahrscheinlichste Rekonstruktionsvariante zeichnet sich eine abweichende Konstruktion von Giebel- und Seitenwänden ab. Die Verschiebung der Eckpfosten in der Nordwand leicht nach innen erlaubt es anzunehmen, dass sich an sie die horizontale Bohle lehnte, die auf dem Oberflächenniveau des Objektes lag. Hinter sie eingeschoben waren senkrecht gestellte Bohlen (Abb. 6). An der Innenseite der Südwand wurden keine Eckpfosten gefunden. Eine der Länge nach horizontal gelegte Bohle verhinderte eine Verschiebung, etwa des Pfostens in der Wandmitte, während in den Ecken erneut die senkrechten Bohlen der Giebelwände standen (Abb. 7).

Die Nische im hinteren westlichen Teil des Objektes deutet an, dass hier die Wand anders aufgebaut gewesen sein musste. Die Situation interpretieren wir so, dass die oberen gegenüberliegenden Enden der Dachsparren nicht mit Hilfe von Auskerbungen mit den Seiten ineinander verzapft waren. Sie waren aneinander gelehnt und am Firstbalken befestigt. Die Sparren über der hinteren Firstsäule hatten an der Unterseite eine Nut, in welche die oberen Enden der senkrechten Bohlen eingeschoben waren (Abb. 6).

23 Ljapuškin 1958, 150, 209, Abb. 96,4, Abb. 115,5-9, Taf. LXXVI.

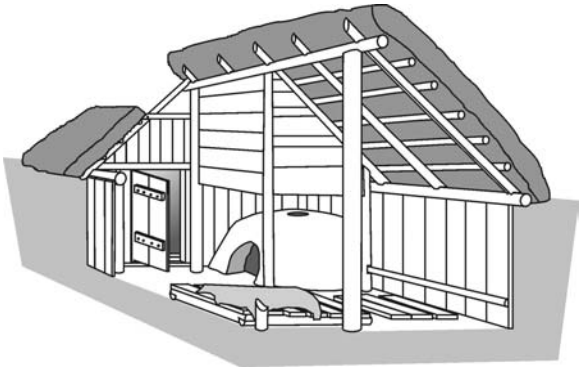


Abb. 7. Bielovce, Objekt 4. Rekonstruktionsversuch. Blick in das Interieur des Grubenhauses

Der Südteil der Wand bildete somit eine Nische. Wir schließen auch eine Interpretation nicht aus, nach der die zugerichteten oberen Enden der senkrechten Hölzer nicht in die Nut eingeschoben waren, sondern die nötige Fuge aus paarweise nebeneinander gelegten Dachsparren gebildet wurde.

Die Verwendung senkrechter und nicht horizontaler Balken im Dachgiebel wurde z.B. auch bei der Rekonstruktion einiger Bauten auf dem Burgwall in Berlin-Spandau in Erwägung gezogen.[24] In der Giebelwand des Grubenhauses von Bielovce ist ein Eingang belegt. Außer diesem befand sich wahrscheinlich in der Giebelpitze eine Öffnung für den Rauchabzug für den neben dem Eingang liegenden Ofen. Auch hier erwägen wir ebenso wie für die Rückwand, eine Befestigung der senkrechten Teile in den Nuten der Sparren, allerdings mit dem Unterschied, dass die Rauchabzugsöffnung durch einen horizontal eingefügten Binderbalken gebildet wurde, der die Sparren verband. Um die Linie der Wand einzuhalten, damit keine Nische entsteht wie im hinteren Teil des Baues, konnten Binderbalken und Sparren mit Hilfe von Auskerbungen angeblattet gewesen sein: auf einer Seite von vorn und auf der anderen Seite von hinten (Abb. 8). Die Nut im unteren Teil des Binderbalkens würde somit an die Sparrennut anschließen.

Die rechteckige Vertiefung im Bereich des Eingangs ist 96 cm lang. Wir halten sie für den Rest des Schwellbalkens. In ihn waren die seitlichen Ständer der Türpfosten eingelassen und eine ausgehauene Stufe der Schwelle. Die angeführte Zurichtung der Schwelle ermöglichte das Öffnen der Tür nur in einer Richtung – in unserem Falle offenbar nach innen, weil der wannenförmige Querschnitt der Eingangsrampe ein Öffnen der Tür nach außen nicht zuließ. Ein weiterer Bestandteil der Schwelle war ein Loch am Rand, das als Lager für die Befestigung der Türangel diente.[25] Eine den

24 von Müller/von Müller-Muči, Abb. 43, Abb. 46.

25 Zum Beispiel Barnycz-Gupieniec 1974, 58, Taf. XXII 3, Taf. XXV 3; Hołubowicz 1956, 97, Abb. 34.

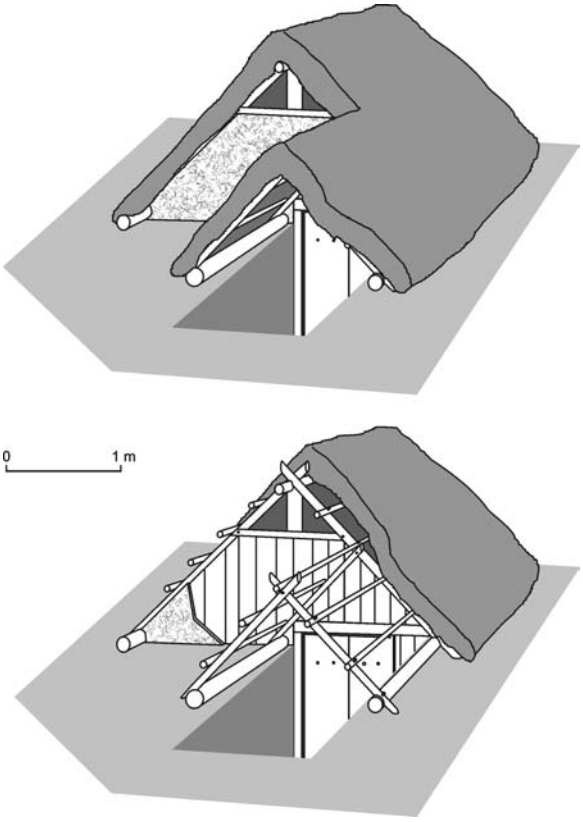


Abb. 8. Bielovce, Objekt 4. Rekonstruktionsversuch. Blick auf den Giebelteil des Grubenhauses

oberen Teil der Türstürze bildende Bohle könnte sich bis in die Ecke des Baues fortgesetzt haben. Eine Nut in ihrem Oberteil ermöglichte einen Aufbau der Wand auch über dieser Stelle.

An der Unterseite befand sich das Loch für die Türangel (Abb. 7, Abb. 8). Es besteht kein Grund zu erwarten, dass die Höhe der Eingangsöffnung das Geländeniveau wesentlich überschritten hätte. Darauf weisen Funde von Türen von mehreren Fundorten hin z.B. aus Opole, Gdańsk und Novgorod. Ihre Breite schwankte in der Spannweite von 0,5-1 m, ihre Höhe lag zwischen 0,9 und 1,4 m, wobei die schmaleren und niedrigeren Türen überwogen. Angefertigt waren sie sowohl aus einem, als auch aus mehreren Brettern. An einer Seite befanden sich an beiden Enden Zapfen, mit denen die Türen in den Löchern der Schwellen und Türstürze befestigt waren.[26]

26 Barnycz-Gupieniec 1974, 59-60, Taf. XXII,2; Hołubowicz 1956, 98, Abb. 37; Zasurcev 1963, 40-42, Abb. 25,1-3.

Der freie Raum zwischen den Holzwänden und der Grubenwand war mit Erde verfüllt worden. Im Hinblick auf die vorausgesetzte geringe Höhe der Wände konnten diese keinem starken seitlichen Druck ausgesetzt gewesen sein. Vielleicht waren sie deswegen nicht mit den Fundamentbohlen verbunden. Zur Erhöhung der Stabilität könnten Riegelstangen mit halbrundem Querschnitt ausreichend gewesen sein, die horizontal oberhalb des Fußbodens in den Kerben der Trägerpfosten befestigt waren. Im Bereich hinter dem Ofen war diese Stütze nicht einmal vonnöten (Abb. 6, Abb. 7). Solche Stangen, mit der flachen Seite gegen das zu befestigenden Holz gewandt, verwendete man als Verbinder bei unterschiedlichen Holzkonstruktionen.[27] Zur Verbesserung der Wärmeisolation des Baues konnten die oberirdischen Teile der Giebel- und Rückwand auf der Außenseite mit einer mit Spreu vermischten Lehmschicht verputzt gewesen sein (Abb. 6, Abb. 8).

Über die Dachkonstruktion sagten wir bereits, dass wegen der Anordnung der Pfostengruben von einem Satteldach auszugehen ist. Die Dachsparren stützten sich mit einem Ende auf den Firstbalken, mit dem anderen auf den Rahmen, der auf der Erdoberfläche auflag. Vergleiche lassen es als wahrscheinlich erscheinen, dass in den Sparren an ihrer Kontaktstelle mit den horizontalen Konstruktionshölzern Auskerbungen angebracht waren. Fixiert wurde die Verbindung durch ein Bohrloch mit einem eingeschobenen Holzstift. Ähnlich, aber ohne die untere Auskerbung, schlossen sich an die Sparren von oben horizontale Dachlatten an.[28] Die Entfernung zwischen den Sparren und den Dachlatten hing von der verwendeten Dachbedeckung ab. Für deren Zusammensetzung haben wir in Bielovce keine direkten Belege. In Anbetracht der Lage der Siedlung in der Überschwemmungszone kann die Verwendung von Schilf oder aber von Stroh angenommen werden. Blöcke von gebrannter lockerer Erde in der Objektverfüllung können von der Wandkonstruktion stammen, doch ist mit letzter Sicherheit nicht auszuschließen, dass sie zum Dach gehören.

Mit Lehm bedeckte Dächer von Grubenhäusern sind besonders aus Osteuropa bekannt.[29] Die Fundsituation in den Grubenhäusern auf dem Burgwall von Novotrojickoje war der von Bielovce ähnlich. In allen Gebäuden befand sich oberhalb der Sohle eine Lehmschicht mit Holzkohlestückchen und verbrannten Zweigen. I. Ljapuškin brachte diese Schichten mit den eingestürzten Resten durch Brand zerstörter Dächer in Zusammenhang. Auf dem Holzskelett des Daches befand sich seiner Ansicht nach Reisig, auf diesem Schilf oder Stroh und auf die Oberfläche wurde Lehm aufgebracht.[30] Auch ein Verputz des Schilfs mit insgesamt fünf dünnen, mit Spreu vermischten Lehmschichten, wie er aus ethnographischen Quellen bekannt ist,[31] kommt offenbar in unserem Falle

27 Vgl. Groß Raden, Behren-Lübchin: Schuldt 1988, 33.
28 Ebd., 41 Abb. 34,a.b.g.h.
29 Siehe z. B. die Rekonstruktionen der Behausungen bei Rappoport 1975, Abb. 58, Abb. 59.
30 Ljapuškin 1958, 194.
31 Makkay 1999, 28, Abb. 22, Abb. 23.

nicht in Betracht, weil die verbrannte Erdschicht in der Hausgrube locker und nicht kompakt war.

Eine Überdachung nehmen wir auch für die schmale Eingangsrampe an, in der verkohlte Holzreste gefunden wurden. Wegen des Fehlens von Pfostengruben gehen wir von einer Erweiterung des nördlichen Daches etwa ab der halben Höhe des Wohnhauses aus, wobei vermutlich eine ähnliche Überdachung verwendet wurde (Abb. 8). Holzspuren einer Wandverkleidung des Eingangs, wie sie z.B. im Falle der Grubenhäuser in Rýmařov festgestellt wurden,[32] fanden sich nicht. Der überdachte Eingang hatte eine wichtige Isolationsfunktion. Er bildete eine Art Vorraum, der den Innenraum des Hauses vor Wind, Regen und auch vor dem Entweichen der Wärme schützte. Noch dazu hätte sich, falls der vertiefte Eingang nicht überdacht war, in ihm Wasser angesammelt, das in das Innere des Grubenhauses über die Schwelle eingesickert wäre.[33]

Im Früh- und Hochmittelalter wurden in den Grubenhäusern auf dem Gebiet der Slowakei vor allem Öfen aus in Trockenmauertechnik gefügten Steinen und eventuell auch Lehmkuppelöfen errichtet. Der im Objekt 4 von Bielovce gefundene Ofen gehört zu dem sehr selten Typ, bei dem während des Baus zur Verbindung der Steine und zur Gestaltung der Wand Lehm verwendet wurde.[34] Der Erhaltungsgrad des Ofens erlaubt es nicht zu bestimmen, ob sich im oberen Teil der Kuppel ein Loch befand oder nicht. Im Falle von festgestellten Löchern besaßen diese einen Durchmesser von etwa 20 cm. In sie wurde ein Topf eingesetzt.[35] Der Rauch entwich aus dem Ofen, sammelte sich unter dem Dach und verließ das Gebäude durch die Rauchabzugsöffnung in der Giebelwand.

Ein experimenteller Versuch des Wohnens im Grubenhaus von Březno zeigte, dass die Ventilationsöffnung im Giebel des Baues außerstande war, ausreichend für den Rauchabzug aus dem Raum zu sorgen. Der Rauch sammelte sich während des Heizens in 1-1,2 m Höhe über dem Fußboden der Behausung und darüber.[36] Zur Verbesserung der Luftzirkulation und des Rauchabzugs benutzte man röhrenförmige Rauchfänge über den Öfen mit Mündungen im Bereich der Rauchabzugsöffnung. Sie waren aus Ruten geflochten oder aus Brettern zusammengezimmert. Aus Sicherheitsgründen waren sie an den Innenseiten mit Lehm bestrichen.[37] Diese Einrichtungen sind im archäologischen Befund nicht mit Sicherheit nachgewiesen. Bekannt sind sie aber aus ethnographischen Beobachtungen, vor allem von der Balkanhalbinsel und aus Osteuropa.[38] Pfostengruben,

32 Goš/Novák/Karel 1985, Abb. 2.
33 Zoll-Adamikowa 1997, 167-168.
34 Ruttkay 1997, 240.
35 Rappoport 1975, 54, 147-148, Abb. 13, Abb. 50.
36 Pleinerová1986, 148, Abb. 32.
37 Skružný 1963, 246-247.
38 Ruttkay 1997, 247.

die rund um Heizvorrichtungen lagen, wurden als Bestandteile solcher Rauchfänger gedeutet.[39] Unsere Idealvorstellung von der Konstruktion einer Rauchabzugseinrichtung im Grubenhaus von Bielovce zeigt Abbildung 7. Ein Teil des Loches in der Giebelwand, der nicht vom Baukörper des Rauchabzuges überdeckt wurde, konnte zur Beleuchtung des Raumes gedient haben, eventuell war das Loch auch vollständig geschlossen.

Die Erkenntnisse zur Einrichtung des Innenraumes des Grubenhauses von Bielovce sind sehr bescheiden. Außer einigen Vertiefungen im Fußboden erhielten sich keine Belege für die weitere Ausstattung des Innenraums. Der Fußboden war vermutlich nicht mit Holzbohlen belegt, weil der Boden festgestampft war. Eine kleinere Grube in der Südwestecke könnte als ein Lager für Nahrungsmittel gedient haben. Eine kleine viereckige Vertiefung können wir vielleicht als Rest der Umrahmung eines Ruhelagers deuten (Abb. 7).

Die Wohnfläche des Grubenhauses betrug nicht ganz 9 m^2, wobei ein Sechstel davon der Ofen einnahm. Diese Fläche ist nur von unserem heutigen Gesichtspunkt aus klein, weil unter den quadratischen Grubenhäusern aus dem 6. bis 10. Jahrhundert diejenigen überwiegen, deren Grundrisse 6-12 m^2 aufweisen.[40] Das heißt, dass der Bau von Bielovce mit seinen Ausmaßen den damalig üblichen Standard erreichte. Sein umbautes Volumen dürfte etwa 15 m^3 betragen haben.

Zur Interpretation des Lebens in einer Behausung mit solchen Ausmaßen sind die Erkenntnisse des ungarischen Archäologen J. Makkay inspirierend, der 1960 die Behausungen in der Zigeunersiedlung Homolytág II dokumentierte. Von 14 Gebäuden wiesen nur drei einen Grundfläche von über 10 m^2 auf, sieben hatten gar eine Wohnfläche unter 8 m^2. Die durchschnittliche Wohnfläche betrug 9,1 m^2. Manche Häuser hatten niedrige Wände, in einigen Fällen saß das Satteldach direkt auf der Erdoberfläche auf. In den Häusern mit vertikalen Wänden und einer Fläche von 8-10 m^2 hatte jeder Bewohner durchschnittlich 1,26 m^2 Fläche bzw. 2,12 m^3 Volumen zur Verfügung. In einem derartigen Haushalt lebten statistisch 7,33 Menschen, davon 1 Mann, 1,66 Frauen und 4,66 Kinder. Vom Frühjahr bis Herbst spielte sich das tägliche Leben der Siedlungsbewohner vor den Häusern ab, wo auf Feuerstellen auch gekocht wurde. Die Öfen, mit denen im Winter in den Häusern geheizt wurde, bildeten häufig deren einzige Einrichtung. Nach Aussage der Bewohner war das Haus desto wärmer im Winter, je kleiner es war und je mehr Menschen in ihm wohnten.[41]

Die Rekonstruktionsversuche von Häusern der frühungarischen Zeit haben vor allem in der ungarischen Forschung eine verhältnismäßig lange Tradition. Eine beachtenswerte Rekonstruktion eines Grubenhauses aus Rákospalota-Újmajor aus der zweiten Hälfte des 12. bis zur ersten Hälfte des 13. Jahrhunderts hat vor kurzem ein Autorenkollektiv

39 Hanuliak 1989, 158; Skružný 1963, 247.
40 Šalkovský 1998, 12.
41 Makkay 1999.

monographisch vorgestellt.[42] Sie gelangten sie zur Ansicht, dass die Wohngrube nur der kleinere, zentrale Teil eines größeren Hauses war, dessen Satteldach auf der Erde in etwa 1 m Entfernung vom Rand der regelmäßig gebildeten Grube aufsaß.[43] Der eingetiefte Teil der Behausung aus Rákospalota hatte die Ausmaße von 3 x 3 m, der rekonstruierte Grundriss des überdachten Teiles würde danach 5 x 5 m betragen. Für eine derartige Rekonstruktion bestehen keine direkten archäologischen Belege.[44] Häufig existieren jedoch den Wohngruben zuzurechnende Objekte, die außerhalb lagen.[45] Falls sich diese sich nicht unter dem Dach befanden, wären sie der Witterung ausgesetzt gewesen. Solche indirekten Indizien stützen die Rekonstruktion des vorgestellten Typs. Offenbar wurden im Karpatenbecken im Früh- und Hochmittelalter die Grubenhäuser nicht nur auf eine einzige Art erbaut. Mehrere Befunde, darunter auch in Bielovce, deuten an, dass die Maße der Wohngruben häufig auch den Ausmaßen der Behausungen entsprachen.

Für den Rekonstruktionsvorschlag versuchten wir, ein gezeichnetes Modell des Grubenhauses von Bielovce zu entwerfen und zu präsentieren. Eine gewisse Idealisierung seines Aussehens war nicht zu vermeiden. Durch die Methode des Befundvergleiches und Überlegungen zur möglichen Verwendung zeitgenössischer Bautechniken haben wir nach und nach diejenigen Konstruktionsverfahren ausgeschlossen, die der Fundsituation nicht entsprachen. Das Ergebnis steht im Gegensatz zu den bisher publizierten zeichnerischen Rekonstruktionen der Grubenhäuser, und dies vor allen Dingen deshalb, weil wir nicht von einer Nutzung der horizontalen Balkenauflage beim Bau der Wände ausgehen möchten. Analogien aus verschiedenen Gebieten weisen aber darauf hin, dass trotz der seltenen Anwendung von senkrechten Wandkonstruktionen diese den früh- und hochmittelalterlichen Hausbauern nicht völlig unbekannt waren.

42 Bencze/Gyulai/Tibor 1999. Hier auch Zusammenstellung der Forschungsgeschichte.
43 Ebd., Beiträge von M. Takács und T. Sabján.
44 Es fehlen Spuren von den Rändern des Baues.

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On "Orient-preference" in archaeological research on the Avars, proto-Bulgarians and conquering Hungarians

Csanád Bálint

It is commonly known that people's historical consciousness, besides depending on other things, is largely governed by the cultural and political affiliation of the acting persons. Thus, it also did not remain unnoticed under archaeologists that during the twentieth century, their field of research was not always capable of evading the effects of contemporary politics. Examinations on this subject actually have become quite en vogue at the moment.[1]

A clear allusion to the possible abuse of archaeological activities in the case of conflict is presented by the – not always observed – by the Convention of The Hague's ban on carrying out excavations in regions engaged in armed conflict or under military occupation. In Central and Eastern Europe, an intervention by politics and current modes of thought into archaeology was in certain cases not preventable. Still, this problem was approached with very different levels of interest in respective national research: Whereas, e.g., a considerable range of publications has been devoted to the work of G. Kossinas and the archaeologists of the Third Reich[2] and likewise an exemplary survey has been made of the French archaeologists during the Vichy-Regime,[3] up until recently, little has been published on comparable phenomena in Eastern and Southeastern Europe. We know more about the influences of the Daco-Romanian theory of continuity and of the communist

1 E.g. Kohl 1993, 181-189; Kohl/Fawcett 1995; Šnirelman 1993, 52-67; *idem* 1996; *idem* 1998, 215-224; Zachrisson 1995, 361-368; Silberman 1997, 103-112; Pluciennik 1998, 816-824; Hardt/Lübke/Schorkowitz 2003.

2 Smolla 1979/80, 1-9; Schwerin von Krosigk 1982; Veit 1989, 35-56; Arnold 1990, 464-478; Junker 1998, 282-292; Steuer 2001. It remains, however, to be verified (or considered), if a concluding verdict on the archaeologists who co-operated with the Third Reich can only then be attempted, when the conduct of colleagues and the functioning of institutions in the Soviet Union is surveyed and analysed in similar detail and criticism. Due to several similarities, it thereby remains to be ascertained, which type of behaviour stems from a general human weakness in the face of a dictatorship and which type actually remains as a testament to the individuals' transgressions and disgrace. Very instructive is the book by L. Klein, who knew the Soviet dictatorship "from the inside" and indicated parallels, see Klein 1997.

3 Olivier 1998, 242-264.

ideology on archaeological research in Romania than what has actually been written in analyses published on this subject.[4] Concerning the meddling of Soviet politics into archaeological research on the Goths and Vikings, on the Eastern Slavs and the people of the steppes, since quite recently we can now fortunately point out a "first swallow" among current publications.[5] Similarly, the question of Pan-Slavism in the regions of Europe mentioned above has also by far not been sufficiently analysed.[6]

At this point, a phenomenon shall be addressed which so far has not even been mentioned in research. In the archaeological studies on the eighth to tenth century proto-Bulgarians on the one hand, and on the tenth-century conquering Hungarians on the other, as of yet, no common tendencies or trends were discernible. The general resemblance of some types of finding, spanning both time and peoples, in this respect naturally plays no palpable role here.[7] Both here and there, traditions of research,

4 Popa 1992, 11-30; *idem* 1994, 123-157. Highly recommendable is Curta 1994, 225-310.

5 Klejn 1993, 21, 28.

6 As this subject is highly complicated, I shall only point out the instance that – unsubstantiated, historically – a Pan-Slavistic surge is observable for the fifties and sixties, and even up until the late seventies, in the GDR, moreover also in the so-called socialist countries of non-Slavic origin. – For the GDR we are merely only able to cite a small number of examples. Thus, e.g., the compendium "Die Germanen" does not even mention Ostrogoths, Gepidae, Heruli etc., as they had inhabited the territory of the "brother-nations" Poland and the Soviet Union (Krüger 1978/1983). On the general map of the "Zonen unterschiedlicher Herausbildung des Feudalismus", not even the Avars or Hungarians were depicted besides the (Southern) Slavs and Bulgarians, see Herrmann 1979, 5, pl. 1b. – In Romania, a number of essays were published in Russian (thus in the series "Dacia" and "Materiale şi Cercetarii Arheologice"); this practise was continued up until the end of the fifties. On Pan-Slavism in Romanian archaeology, see Curta 1994. – In Bulgaria, the approach towards the own origin was subject to several changes. Between the two World Wars, the Turco-Bulgarian roots were favoured, whereas in the fifties and sixties the Slavic constituent was regarded as more important, and in the seventies, the Turkish root of the ethnogenesis was erased. A realistic examination of the proto-Bulgarian period only begins after the Romanian Revolution around 1990. A critical historiographical synopsis is yet to be published. – Hungarian archaeology kept with the advice "give to the emperor ...". With the exception of Á. Cs. Sós, no significant influence by Pan-Slavism is observable (as opposed to several other historians). The same is true for nationalism between the two World Wars, see on this subject Bálint 1986, 166-174. Interestingly enough, all of these countries – as of the state of campaign in 1944 – stood on the side to be later defeated. If this Pan-Slavism occurred due to the expectations or demands on the part of the Soviet forces, or was a result of the servility of the local dignitaries, cannot be ascertained without detailed study of the history of research.

7 It should, however, be pointed out here that the number and importance of these similarities has lately become so large, that a revision of the origin of proto-Bulgarian and conquering-Hungarian material culture is become necessary.

problems, methodology and the social surrounding of archaeologists are indeed so different[8] that, with the exception of Géza Fehér,[9] one of the founders of proto-Bulgarian archaeology, hardly any connections between the two fields of research seem observable. Still, if we delve into the deeper levels, i.e. the methods and motives of research, we are able to discern a similarity. In research on the Avars, on the conquering Hungarians and on the proto-Bulgarians, a specific point of view is recognisable, which I would like to term – briefly and simply – as an "Orient-preference".[10] This consists of a perception, respectively a method of research conceding precedence, regarding the archaeological material under examination, to specifications and descriptions connecting them to the Orient, whereas other regions of culture, like Byzantium and Europe, are mostly not incorporated.[11] One of the characteristics of this "Orient-preference" is that it:

a) regards the Orient as being globally independent, namely regarding time, space, the ethnic and political circumstances of the data under consideration and

b) all ethnographical specifications of peoples of the Asian steppes and of Siberia, even up until the twentieth century, as being directly relevant for the archaeology of East- and Central-European peoples of the steppes in the early Middle Ages.

This perception agrees with that of Hungarian ethnographic research and society at the end of the nineteenth century, according to which, the heritage of all ancestors, including the Old Hungarians, was to be found with the common people and "ethnography" to be classified "as living archaeology".[12] Here then lie the romantic roots of this "Orient-preference"! It is the endeavour of an "Orient-preferring" scientist, to merely unearth parallels

8 In Hungary, the founding of the chairs for archaeology took place over a century earlier than in Bulgaria. At the same time, systematic collection activity of the museums began earlier. Up until the last third of the twentieth century, research was mainly influenced by German and Austrian archaeology, on this subject, see Bálint 1997, 17-26.

9 For a CV and a bibliography, see Fodor 1990, 256-259. A positive sign for a change in the fifty years of continuing condemnation is the reprint of his book published in Bulgaria in 1940: Feher 1997.

10 Interpretation and content of the term "Orient" in both German language and scholarship are not uniform throughout time and space (indicated to me by U. von Freeden, who was kind enough to read the manuscript and to whom I would like to express my gratitude). They at the same time encompass much more variegated and richer facets than contained in the term Orient, impossible to properly discuss in this essay. The fundamental mistake of the "Orient-preferential" authors consists of them actually using the term Orient independently of time, space and cultural circumstances. Studies on how such a point of view could have developed belong to the fields of sociology and psychology. The romantic roots cannot be denied and Gy. László, the most eminent representative of "Orient-preference" and teacher at the same time of several generations of Hungarian archaeologists, himself wrote about the influence that was exerted on him by the works of C.G. Jung and G. Róheim.

11 Interestingly enough, a certain fascination for the Orient can also be determined with J. Werner, as demonstrated by U. Fiedler, on this subject, see Fiedler 1996, 260.

12 Kósa 1996, 1042; Hofer 1996, 1043.

between the given Avar, conquest-age or proto-Bulgarian finding, respectively ornamentation, with the help of which he can then substantiate the conclusion that the type of find to be scrutinised, the ornamental element, the depiction, etc. originated in the Orient. Behind this methodically misguided concept, widespread throughout Central and Eastern Europe, stands the idea that historical questions can be answered with the aid of parallels and analogies from material culture. The resulting conclusion then seems to be purely culture-historical. It eventually evokes the impression of being one hundred percent historically founded, due to the fact that these peoples, from whom the examples for comparison originate, were indeed of eastern origin. In the course of this procedure, parallels are used independent of their originating from China, from Inner or Central Asia, from Iran or the Arab Caliphate. At the same time, the following questions are not even posed:

a) What does the occurrence of typologically similar types of findings, elements of ornamentation and depiction signify?

b) What was the original aim of the depiction? – one of the basic problems of modern research into the history of art.[13]

Regarding the method, the researcher standing under the impression of the "Orient-preference" will not proceed unobjectionably. Even if in the course of the analysis based upon it, it is never spoken out or put into writing, either unconsciously or simply from habit one acts on the assumption that one is dealing with a chain of arguments, arising in the course of the examination, whose individual elements are more or less right. Yet it is the manner of their conjunction and especially the resulting conclusion that I hold as being erroneous. The following theses are to be examined closer:

"The origin of the Avars, the conquering Hungarians and the proto-Bulgarians lies in the steppes." This is undisputed. Then, however, this statement is connected with another, according to which "the material culture, resp. the findings on the Avars, the conquering Hungarians and the proto-Bulgarians represent a kind of steppe-culture". Although this is equally true, these two sentences are not causally compellingly connected: The ethnic origin and the ethnogenesis of a people do not necessarily directly pertain to material culture.[14] And a further claim is connected with this statement: "The material culture resp. the findings on the Avars, the conquering Hungarians and the proto-Bulgarians represent individual branches of Asian cultures." To some measure this also is true, especially in the case of spiritual culture. But due to all of the specifications mentioned above, the "Orient-preferential" perception arrives at this point of view: "For the examination of the material culture of the Avars, the conquering Hungarians and the proto-Bulgarians, Asian cultures are not just only highly relevant, but they represent inexhaustible sources for the process of

13 This problem is examined in more detail in my book on the hoard of Nagyszentmiklós (Bálint 2004).

14 Since the penning of these lines, the fundamental monograph by S. Brather (see Brather 2004) has been published, examining this complex of questions.

reconstruction of their material culture." This latter assumption resp. method is idealistic, static and inconsequent, moreover it is unhistorical and, therefore, completely fundamentally amiss from a methodical point of view.

Idealistically, the "Orient-preference"-influenced researcher views the Orient as an intrinsic unit, whereby he will serviceably regard arbitrary elements of Oriental culture during research on the above-mentioned Central- and Southeast-European peoples as being consistently. This scholar does not care if the parallels incorporated by him can be retraced, either chronologically, temporally and culturally to direct contacts. By the same token, no attention is paid to the enormous geographical distances between the Carpathian Basin and the regions included into the discussion. How, therefore, should analogous phenomena be precisely interpreted? Do they possess an historical basis? As an example, we shall now look at the problem of the evaluation of some Central Asian depictions for the archaeology of the peoples under scrutiny here

In the reconstruction of costume in publications and exhibitions, the Avars and the conquering Hungarians are always garbed by some authors with reference to the example provided by wall paintings from urban cultures from Central Asia.[15] According to the general opinion, these murals depict persons, whose clothing and costume accessories are related to, if not identical with that of the people of the steppes. This practice already has a certain tradition[16] in the research on European steppe peoples and was also utilised by non-Hungarian archaeologists in the last decades.[17] And yet it was never attempted, as opposed to an unreflective adoption of these examples, to historically and culturally explain a series of questions. Like, for instance, how and why costume in the Carpathian Basin or on the Balkans could have resembled that of Central and Inner Asia. Was there actually any "steppe clothing" typical to this kind of culture?[18] That the Asian depictions could possess any relevance to the archaeology of the Avars at all is, according to the generally prevailing opinion, induced by the historical circumstance that there had been close contacts between

15 In Szeged an archaeological exhibition was staged, in which the garb and costume of the Avars was reconstructed according to certain Central Asian paintings, see the catalogue: Kürti/Lőrinczy 1991; critically Bálint 1990, 221-226.

16 The discovery of the importance of the Asian depictions for the archaeological of the Avars and conquering Hungarians are to the credit of Supka 1914, 17-18, 104 and Fettich 1926, 60; idem 1929, 66-68. Later, this point of view was incorporated by László (e.g. László 1942, 76, fig. 12, pl. V 4) in his publications and especially in his lectures, to then subsequently become a typical characteristic of Hungarian migration period -research (on this subject, see also Bálint 1990). On László's work, see Bálint 2004,82-87.

17 Like e.g. Kovačević 1977, 18, fig. 6 and 7, 163, fig. 100, 185, fig. 123 right; Daim 1977, 17.

18 Certainly not, and if we regard the well-preserved textile finds from the early medieval Orient, like for instance Lop-nor, Moščevaja balka, Antinoe, etc., then we can immediately determine that these hardly resembles traditional costume in the attempts at reconstruction, on this subject, see: Sylwan 1949; Arslanova 1963, 82, fig. 5; Martiniani-Reber 1986, 56, No. 23; Ierusalimskaja 1996, pl. XVIII, XIX, XX.45, XXII.50, LXXIII, LXXVII.

the inhabitants of towns and oases and the peoples of the steppes in Central Asia. But so far, no research has been made on what the political or cultural reason for such an adoption of culture from steppe to settled peoples and urban populations could have been. Concerning the archaeological reflection of these assumed cultural contacts, a look at the publications of finds from burial grounds and urban excavations[19] suffices to ascertain that no significant influence from the steppes into the material culture of the latter is observable. The suspicion arises, that the small number of commonly worn types of jewellery and objects, resp. those acquired from the people of the steppes from advanced civilisations, were throughout misunderstood as "proofs" for the presumed influence of the steppe on the neighbouring cultures to the South. It is not at all necessary to become immersed into the study of the history and cultural history of Central and Inner Asia[20] to arrive at the following conclusion: In historical and cultural regard, the overall picture was a lot more complicated than that, painted by researchers of the Avars, Hungarians and proto-Bulgarians themselves, a one-sided and, moreover, undue simplification. This applies on the one hand to the presumed "counteractions" or "influence of the peoples of the steppes on Asian civilisations" and, on the other hand, to the notion which is harboured, by virtue of certain early medieval depictions, to be able to imagine or even reconstruct the appearance of the Avars, Hungarians and proto-Bulgarians. It would seem superfluous to emphasise that the region of Central or Inner Asia referred to here, from which archaeological research on the peoples in question adopts its analogies, did not exclusively have peoples of the steppes for neighbours. It may be true for the North, yet in the South lay the advanced civilisations of Persia, India and China. An influence of the latter on Central Asia always existed, with its intensity varying in time and depending on several different circumstances. Thus, for instance, we have to reckon with a strong presence of Sassanid influence in Central Asia, so that it is possible to refer to this zone as a peripheral culture of Iran. The Central and Inner-Asian murals constantly cited in our research conspicuously display their having been shaped by Buddhism and Manichaeism.[21] Moreover, cultural influences from Gupta-age India have to be taken into account for East and West Turkestan.[22] And finally, one must not ignore Classic Persian and Greco-Roman art (Parthians and Gandhara), both living on partly by direct, partly by indirect conveyance.[23] The scholarship of the history of art is of the opinion that this cultural diversity was kept together by a framework of certain elements, composed of the general geopolitical situation and the role of Khotanese and Sogdian as

19 E.g.: Raspopova 1980; Gorbunova 1986; Litvinskij 1986.

20 Frumkin 1970; Yaldiz 1987; Spuler 1966. – On cultural history and history of art, see recently: Hambis 1977; Haussig 1988; *idem* 1992.

21 E.g.: Waldschmidt 1930; Gaulier/Jera-Bezard/Maillard 1976; Grenet 1986, 97-131; Widengren 1983, 965-990.

22 E.g.: Rowland 1938; Mandelštam 1966; Williams 1982.

23 Schlumberger 1969.

a *lingua franca*.[24] There is no word to be found alluding to any kind of effect or influence from the world of the steppes in these analyses.[25] It would easily be possible to extensively list the political influences documenting the contacts between the towns of East and West Turkestan and the individual posts of the Silk Road on the one side, and the inhabitants of the steppes on the other. Yet if "Orient-preferential" research establishes its thesis of the "influence" resp. "of a conveyance from the steppes to advanced civilisations" and, *vice versa*, of an "influence" or "conveyance from advanced civilisations to the steppes" on the basis of these occurrences, then it should not be forgotten that cultural contacts and transfers, originating from the advanced civilisations and leading to the people of the steppes, were more intensive by far. The political suzerainty of the Sassanids and Arabs, of Tibetans and Chinese was undisputedly the one more important in this region. It should be pointed out here, that behind the truism of the "influence from the steppes" lie no chronological analyses of the typology, as is common practice in archaeological research on the Avars, Hungarians and proto-Bulgarians. Quite the opposite, even a superficial scrutiny with Central and Inner Asian depictions demonstrates that costume, equipment and the anthropological character of persons portrayed on them, moreover finally the ornamentation cannot leave us in doubt as to the fact that they fundamentally were not a part of the culture of the steppes. This also applies to the scenes of a non-explicit kind, e.g. the Korean envoys on the murals from Afrasiab.[26]

When specialists accredit certain – yet practically nearly always the same – few Central Asian depictions with an outstanding significance for studies on the Avars, Hungarians and proto-Bulgarians, then there is one further factor to be considered. This is not only of an archaeological-cultural importance, but also has methodological consequences. I am referring to the striking discrepancy between the number of East and West Turkish graves. From the Eastern half of the Khaganate we know of around 400, from the Western of not even fifty burials of Turk type.[27] This disparity cannot be ascribed to the level and intensity of research, or to a lack of interest regarding the resident colleagues.

Even if the relatively large number of graves of the Eastern Turkish type is undoubtedly a result of extensive research expeditions preceding the experiments with hydrogen bombs in the area of Tuva (the modern-day Republic of Tuva), this offers no satisfactory explanation for the discrepancy mentioned above. A number of expeditions were also made

24 The best synthesis is to be found in Bussagli 1963.

25 Bussagli 1963, 15-16.

26 Anazawa/Manome 1976.

27 A complete catalogue of burial finds from the Turkish age is lacking as of yet. This assessment came from the author and Gleb Kubarëv (viva voce). A review of the archaeological material is presented by Mogil'nikov 1981; Bálint 1989, 237-267.

into the Soviet Union's Central Asian republics.[28] Also, national feelings of the resident field archaeologists positively contributed to concentrating the objectives and activities of their studies on the people of the steppes during the early Middle Ages. Therefore, the fact that, despite optimal circumstances, we know of only such a small number of burials of the Turkish type – and also of the eighth-century Uigur, and ninth-century Kirghiz type – from this region of Central Asia, is not simply to be seen as a failure in research, but as a purely scientific phenomenon.

In this connection, the rapid adaptation of Chinese culture by the Eastern Turks in the seventh century gains in importance, mentioned so critically on the famous inscription of Orchon from the middle of the eighth century by Kül tegin, one of the great Turkish leaders.[29] The bulk of the text consists of Turkish runes. It is, however, very symptomatic that another segment of the same inscription is written using Chinese characters, although the Chinese were considered to be the arch-enemies of the Turks! How then can the influence of the Western Turks on the material culture of Central Asia, ever estimated as momentous by research on the steppes, be truly verified, if the primary cultural phenomena of this people are archaeologically not subsumable? The following historical episode exhorts to great caution in cultural weighting: Around the middle of the fourth century, the emperor of China ordered all of the Hiung-nu (the Asian Huns, according to general opinion) living in his empire to be killed. As the majority of the Hiung-nu wore Chinese clothing and spoke Chinese, only their "large noses" and "scanty beard" could serve as distinguishing characteristics. Thus, in the execution of this racist order also several Chinese were killed.[30]

The following can be recorded for the relations between the Central Asian peoples of the steppes and China: In the instances, where we find close contacts and cultural transfer, we probably must at least reckon with a progressive adaptation of Chinese by the barbarians. In the case of missing cultural contacts between the people of the steppes and the Chinese Empire we can anticipate no noteworthy influence – no matter in which direction. As already mentioned, these and similar questions are neither posed nor answered. Instead, Oriental-bent scholarship *a priori* assumes an identity of Avar, Hungarian and proto-Bulgarian (material) culture with that of the Eurasian steppe and even that of whole Central and Inner Asia. A further mistake, finally, consists in making all available readings in the subsequent steps of scientific processing subject to this assumption.

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28 E.g.: Trudy Kompleksnoj Kirgizskoj Archeologo-Ėtnografičeskoj Ėkspedicii; Materialy Chorezmskoj Ėkspedicii; Trudy Chorezmskoj Ėkspedicii (all: Moscow); Trudy Južno-Turkmenistanskoj Archeologičeskoj Kompleksnoj Ėkspedicii (Aščhabad); Trudy Tadžikskoj Archeologičeskoj Ėkspedicii, in: Materialy i Issledovanija po Archeologii 37, 1953; *ibid*. 66, 1958; *ibid*. 124, 1964.

29 North side cap. 5-8. Turkish text and translation: Malov 1951, 16-20.

30 McGovern 1939, 350.

The "Orient-preferential" method of research is *static*, due to its singling out of the facts utilised as parallels removed from their context, completely disregarding not only the local development (the precursors of certain types and their continuous influence), but also the cultural contexts of a find. A literally static mindset is testified by an adherence to the notion, according to which the material culture of a migrated people, in spite of both the time meanwhile passed and the continuously growing distance, will have remained similar or even identical to its region of origin. Both regions – the (disputed or assumed) original homeland and the new territory of the peoples – must at first be studied independently of one another. Concerning the culture of the former, it can be stated that after the migration of a part of the population the material culture will of course continue to develop. It will only partly remain identical to the culture of the preceding period, following the cultural processes of the entire region. Furthermore, the instance, not in fact really surprising, must be pointed out that such processes can proceed completely different in the individual regions. This also refers to the culture of the migrants, which will of course continue to develop under the influence of their new surroundings. Due to spatial, temporal and cultural reasons, the cultural development of the original home and that of the new one proceed in a different fashion and are hardly comparable. Consequentially, there exists no "Oriental culture" as such, from which, according to level of information, to demand and taste we can permissibly construct "parallels" and "analogies" to the Avar, Hungarian and proto-Bulgarian finds.

The "Orient-preferential" method of research is *inconsequent*, as its point of view is too narrow concerning geography and culture, yet too broad regarding the chronology.

a) Central and Southeast European scholars influenced by the "Orient-preference" either entirely or partly neglect to search for potential parallels among the Byzantine or European material with the Avar, proto-Bulgarian and Hungarian finds. An example concerning this matter is represented by the Avar-age type of ear jewellery from Mezőszilas, which I have already presented at another occasion.[31] It appears that a piece comparable to the Central European Avar material, unearthed in the burial ground Kudyrge in the Altai, cannot serve as proof for the Central Asian origin of the Avars, as similar finds have also been made at other locations and belonging to other ages. Especially important are the more elegant, considerably more precious version of this jewellery, namely the golden ear pendants exclusively discovered in East European graves from the sixth and seventh centuries. Thus, for instance, technical details and the context of the findings of grave 2 from Ufa-Medicinskij fakul'tet positively show that this type of jewellery was of Byzantine origin.[32]

As a further example for the inconsequential approach the studies on the multipartite belt trimmings of the early Middle Age-steppe people should be mentioned. The numerous

31 Bálint 1993, 205-206.

32 Achmerov 1951, 127, fig. 1,3. This burial find and similar earrings are examined more closely by me at this point.

source references from the world of the steppes, documenting the belt as a badge of rank, and several illustrations on Central Asian murals are constantly cited in scholarly literature on Avars and ancient Hungarians.[33] That belts as such from the age of the Old Testament in the Near East, in the Roman and Byzantine Empires, and in the Medieval Occident had also been used as insignia[34] eluded the attention of the "archaeologists of the steppes". What reason then can there be for such obvious ignorance? The only explanation I can find is that this inattention results from the "preference for the steppes". Nobody considered that the often-cited Central Asian depictions of belts could be irrelevant to the solution of the question of origin of the multipartite belt trimmings, as they either are not multipartite, or must be temporally estimated a lot later than the belts of the early Avars. Thus, for instance, the ninth-century painting, depicted in every exhibition and popular scientific study on the Avars, of a standing horseman with a quiver and lance and two plated belts originates from a region nearly 4,500 km distant and from an age, in which the Avars no longer possessed an own culture![35] And nobody so far has demonstrated that depictions of multipartite belts are also to be found in other regions entirely (even with the enemies of the former Avars), namely around the middle of the sixth century. These are Coptic murals, moreover mosaics from Israel, from North Africa and even the imperial palace in Constantinople.[36] If one, therefore, searches for parallels exclusively in a certain direction, then one necessarily must arrive at the conclusion that the culture under scrutiny is related to the one in the region previously chosen. If other directions and other cultural regions are not taken into account as a matter of principle, then the final result may appear to be impressive, but will actually be completely wrong.

b) Therefore, due to the "Orient-preference", the too imprecise point of view, chronologically seen, of the finds, depictions and phenomena from the Orient is obviously based on a presumption, according to which the culture of the Orient was supposedly timeless. This narrow view of the examinations is due to a lack of knowledge and the missing want of a broader horizon. Behind this attitude, basically inspired by a notion of mental history, hides something else, i.e. the idealistic-seeming notion of a persistence of Asian cultures. How else could the idea possibly have arisen, for instance, of using the figures of a sixteenth-century Ottoman shadow play as parallels to the most famous scene of the hoard of Nagyszentmiklós from the early Middle Ages?[37] Naturally, such crude mistakes are seldom made in research. Still, there is hardly ever any notice taken of a more precise relative chronology. The fundamental requirement for the use of finds and depictions from

33 E.g.: László 1955, 225, fig. 61; Erdélyi 1966, fig. 3.5; Kovačević 1977, 119, fig. left; 185, fig. 123 right.

34 E.g.: Schüppe 1928, 126-146; Hančar 1940, 4-18.

35 von Gabain 1973, pl. 68, fig. 163; von Le Coq 1913, pl. 2c; Maillard 1973, fig. 165c.

36 On questions in this context, see Bálint 2000.

37 As was done by A. Alföldi, well-known and not only renowned for his research on the age of the Romans (Alföldi 1951, 127, pl. II.2/3).

the Orient for the study of the Avars, Hungarians and proto-Bulgarians in the context of cultural-history, consists of these originating from the time before their respective migration to Europe. Yet this simple fact often finds no consideration. Caution before such a linking of so-called parallels dating from a later time will prove necessary, as we scrutinise finds and illustrations that actually comply with the chronological prerequisites mentioned. As an example I would here like to point out the types of sword on Central Asian murals and in early Avar-age graves. On the two paintings known from Qyzil, dating to ca. 500 AD, we see the artist himself carrying a sword buckled to his waist.[38] The fastening eyelets of the sword, the shape of the stone intarsia of the mounting of the opening the scabbard is completely unknown from finds of the Avars. Moreover, it must be observed that the sword hangs from an unadorned belt and its owner anthropologically must be positively identified as being of Indo-Iranian origin. In this case, one could argue that the Avars simply did not adopt this type of sword, or that Qyzil – at least at that time – did not have any contact with the Asian Avars.

The opposite is true for another mural from Qyzil, well known to Avar research. On the frescoes of the "cave of sixteen swordsmen" we recognise short swords, whose fastening eyelets seem to be typologically related to the p-shaped ones of the Avars. Yet they cannot be chronologically associated with the Avar-age swords. The paintings only date from the time around 600 until 650, thus precisely not from before 557, the date of the Avars' migration from Asia.[39] The depiction from the "cave of sixteen swordsmen" can, therefore, on no account prove that the Avars brought this type of eyelet from Asia. Moreover, the length and shape of these swords and their hilts would make it seem even less likely that these hanging eyelets could be related to the Avar swords in any way. In Qumtura, for instance, one sees a Tocharian prince with such a sword, worn from a belt with large round buckles.[40] Instead of deriving the p-shaped eyelets of the Early Avars from Central Asia,[41] it must rather be taken into account that this type of sword was already found in the region of the Black Sea and in Transcaucasia in the course of the sixth century.[42]

The "Orient-preferential" method of research is *unhistorical*, as it either negates historical incidents and processes in favour of an ideology, or, in more fortunate cases, only treats them as being of secondary importance. It can therefore happen that historical facts are completely forgotten or disregarded. It remains inconceivable, how the following

38 Grünwedel 1912, 154, fig. 354; von Le Coq ²1977, 37, fig. 4,38; fig. 6,7; O'Neill 1982, 74.
39 Grünwedel 1912, 50, 56; O'Neill 1982, 168.
40 von Le Coq ²1977, 64, Abb. 86.
41 In agreement with other scholars, I also used to formerly be of this opinion: Bálint 1978, 180-183.
42 Bálint 1992, 456, pl. 20; 460, pl. 24; 462, pl. 26.

statement could have occurred, i.e. that the Slavs lived in the vicinity of Iran.[43] Even if this assumption were true (historically speaking it is of course completely impossible!), the resulting argumentation lacks any evidence as to the consequences of such circumstances for the material culture of the proto-Bulgarians from the eighth to tenth century. At the moment, more and more often quotes and even essays appear, drawing a causal connection, between e.g. illustrations or ornamentation from finds of proto-Bulgarian toreutics with those of the goldsmith's craft of Central Asia.[44] In these publications, however, it is never comprehensibly demonstrated, how these Oriental elements actually could have arrived in Bulgaria. In this connection, the word "contact" is most often used. What is meant by it? We know of no trade activities or diplomatic missions of any kind in the early Middle Ages between the Balkans and Asia. It is of course theoretically not impossible that such could have existed, but arguing along these lines is, in view of the current state of research, far too risky.

Does then the concept of N. Mavrodinov, introduced in his classical book on the hoard of Nagyszentmiklós, present a possible model of explanation for the depictions on proto-Bulgarian finds? He assumes that the Oriental elements occurring in proto-Bulgarian art must in all probability originate from the epoch where the Bulgarians still lived in Asia.[45] Let us, therefore, pay some attention to this theory! Let us look at first at the archaeological evidence: Here it must be stated that it is completely hopeless at the moment to archaeologically subsume the Old Bulgarians in Central Asian finds from the time before their migration to Europe (around 463). Nobody so far has attempted to single out the legacy of the Bulgarians from between fifth and seventh century-findings from the East European steppes. With the exception of the find from Malaja Pereščepina,[46] there exists practically nothing in Eastern Europe or Central Asia comparable to the proto-Bulgaran material from the Balkans. From the point of view of the history of art, the following question arises from N. Mavrodinov's concept: Is it at all conceivable that a people, after several centuries, after having migrated over a distance of thousands of kilometres, moreover, after having made contact with several cultures along their way and despite undergoing such a highly complicated process as is ethnogenesis would have been able to retain such ancient

43 This – undoubtedly under the (indirect?) influence of J. Strzygowski and the "Wiener Schule" – was written by the Bulgarian academy member I. Dujčev and the renowned Byzantine scholar V. Beševliev. Even if a mistake crept up in translation here and they probably actually meant Iranic (-speaking) peoples, thinking i.e. of the descendants of the Sarmatians and Alani in the steppes of Eastern Europe, ethno-historical terms and geographic dimensions must naturally not be confused. Dujčev 1966, No. 76, 243-313; Beševliev 1967, 237-247.

44 Mavrodinov 1943. Her ideas are based on a certain tradition of research in Bulgaria, see Protić 1930, 137-159.

45 E.g.: Dončeva-Petkova 1979, 28, fig. 12; Stanilov/Atanasov 1993, 48-49, fig. 10-11; Vitljanov 1990, 195-204.

46 Werner 1984.

cultural elements, the roots of which, in addition, we do not at all know or are able to provide evidence for? And I would like to repeat emphatically: Not a single historical and/or archaeological element of this formidably long chain, which could possibly link the Balkans, or, in the case of the Avars, the Carpathian Basin with Asia, is known to us. We are therefore confronted with an illusion, if, at the current level of knowledge, we should encounter any claim of there being the possibility of implicating the finds and ornamentation of the proto-Bulgarians (and also of the Avars) directly with Asia. This would signify that the search for the routes of migration of types of finds and depictions, moreover also of ornamental elements are still part of our task!

Where then lie the roots of such a point of view, reviewed here under the heading "Orient-preference" and, as of yet, never openly formulated? In my opinion, they are to be sought after, on the one hand in the method of Eurasian steppe archaeology, and, one the other hand, in the political and social environment with its resulting conditions for research.

Method

So far, research on Central, Southeast and East Europe was not able to do away with the mistake of regarding types of findings as being ethnospecific. As the world of the steppes in the early Middle Ages, compared to the neighbouring Finno-Ugrians, Slavs, etc. *grosso modo* formed an ethno-cultural and economic unity, in which synchronous developments took place, it is no wonder that certain types of finds occur in the East European or Eurasian steppes, the Southern border region of the latter and also with peoples of steppe origin in Central and Southeast Europe. And yet, finds are still regarded as signs of migration respectively for ethnic contacts, whereby no attention is paid to their chronology, i.e. their synchronous position. Particularly revealing hereby is the procedure, by which the finds, resp. the ornamental elements from the steppes and the Orient are dated to a later time than, for instance, the examined finds or ornaments in the Carpathian Basin itself.

Political and social surroundings

In the case the Avars, the conquering Hungarians and the proto-Bulgarians, it must be kept in mind that Hungary and Bulgaria are primarily responsible for archaeological research on these peoples. They lay claim to a descent from the steppes of Eastern Europe, i.e. to a non-Indo-Germanic ancestry. It was, therefore, obvious to these archaeologists from the beginning that the roots of the material legacy of their ancestors, who had migrated from the East was also to be sought after in the East, namely in the steppes of Eurasia. Any provision for the, actually generally known, instance

that material culture, language and anthropology do neither necessarily, nor exclusively directly refer to the origin of the people under observation, has so far either not been generally acknowledged or is not known to the archaeological research on Central, Southeast and Eastern Europe. One factor undoubtedly contributing to the persisting survival of the "Orient-preference" in Hungarian and Bulgarian archaeology was the non-uniform Slavic descent of these peoples. It thereby was possible to distance oneself from the Pan-Slavistic tendencies observable in most Eastern European countries in the course of the twentieth century. Thus, the "Orient-preference" was, or is connected to national identity. Those scholars influenced by the "Orient-preference" are, in my opinion, anxious to solve an antagonism which would seemingly serve to the frustration of some: Hereby, their respective peoples, i.e. Hungarians or Bulgarians with their Eastern origins, are to be integrated in Europe, yet at the same time emphasising their differing ethno-cultural origin as compared to Europe.

Finally, a crucial point should here not go unmentioned. It is a fact that after World War II the number of technical publications regarding Byzantine history of art and archaeology increased by leaps and bounds, becoming very numerous, moreover the majority of publications from Western Europe did not reach the libraries of the former Eastern Bloc. This had not only financial reasons. The resulting lack of knowledge of an important part of the specialist literature entailed the possibility for a continuous existence for humanity's ancient dream of "*ex oriente lux*". An overcoming of the "Orient-preference" can only be expected from the intensification of methodically unobjectionable research in archaeology, and on the material and social invigoration of the middle classes in Central and Southeast Europe.

(translation: David Toalster)

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1: nach Vonderau 1931, 56 Abb. 23, Ergänzungen durch Th. Kind; 2: nach Vonderau 1899, Plan I, Ergänzungen durch Th. Kind; 3: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: Vonderau-Museum Fulda (VMF) Inv.-Nr. I AF 11, Nr. 2: VMF Inv.-Nr. I AF 12, Nr. 3: VMF Inv.-Nr. I AG 8, Nr. 4: VMF Inv.-Nr. I AG 1, Nr. 5: VMF Inv.-Nr. I AF 16, Nr. 6: VMF Inv.-Nr. I AF 15, Nr. 7: VMF Inv.-Nr. I AF 14; 4: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: VMF Inv.-Nr. I AC 39, Nr. 2: VMF Inv.-Nr. I AC 38-2, Nr. 3: VMF Inv.-Nr. I AC 88, Nr. 4: VMF Inv.-Nr. I AC 91, Nr. 5: VMF Inv.-Nr. I AC 30, Nr. 6: VMF Inv.-Nr. I AC 98, Nr. 7: VMF Inv.-Nr. I AB 25, Nr. 8: VMF Inv.-Nr. I AB 13, Nr. 9: VMF Inv.-Nr. I AC 93, Nr. 10: VMF Inv.-Nr. I AC 89, Nr. 11: VMF Inv.-Nr. I AC 27, Nr. 12: VMF Inv.-Nr. I AC 37, Nr. 13: VMF Inv.-Nr. I AC 22, Nr. 14: VMF Inv.-Nr. I AC 28, Nr. 15: VMF Inv.-Nr. I AC 24, Nr. 16: VMF Inv.-Nr. I AC 23, Nr. 17: VMF Inv.-Nr. I AC 29, Nr. 18: VMF Inv.-Nr. I AC 79, Nr. 19: VMF Inv.-Nr. I AC 34, Nr. 20: VMF Inv.-Nr. I AC 26, Nr. 21: VMF Inv.-Nr. I AC 6+7, Nr. 22: VMF Inv.-Nr. I AC 38, Nr. 23: VMF Inv.-Nr. I AC 48, Nr. 24: VMF Inv.-Nr. I AC 47, Nr. 25: VMF Inv.-Nr. I AC 49, Nr. 26: VMF Inv.-Nr. I AC 33, Nr. 27: VMF Inv.-Nr. I AC 37; 5: Entwurf: Th. Kind; 6: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: VMF Inv.-Nr. I AD 1 , Nr. 2: VMF Inv.-Nr. I AD 134, Nr. 3: VMF Inv.-Nr. I AD 132, Nr. 4: VMF Inv.-Nr. I AD 84, Nr. 5: VMF Inv.-Nr. I AD 131, Nr. 6: VMF Inv.-Nr. I AD 133, Nr. 7: VMF Inv.-Nr. I AD 3, Nr. 8: VMF Inv.-Nr. I AD 2, Nr. 9: VMF Inv.-Nr. I AD 139, Nr. 10: VMF Inv.-Nr.

I AD 74, Nr. 11: VMF Inv.-Nr. I AD135, Nr. 12: VMF Inv.-Nr. I AD 4, Nr. 13: VMF Inv.-Nr. I AD 5, Nr. 14: VMF Inv.-Nr. I AD 11, Nr. 15: VMF Inv.-Nr. I AD 78, Nr. 16: VMF Inv.-Nr. I AD 85, Nr. 17: VMF Inv.-Nr. I AD 6, Nr. 18: VMF Inv.-Nr. I AD 137, Nr. 19: VMF Inv.-Nr. I AD 140, Nr. 20: VMF Inv.-Nr. I AD 144; 7: Funde nach Wolfgang Czysz, „Eine bajuwarische Wassermühle im Paartal bei Dasing“, in: *Das Archäologische Jahr in Bayern* 1993 (1994), 126 Abb. 89, der Querschnitt nach Uta v. Freeden, „Die Wassermühle. Ein antikes Erbe“, in: Wilfried Menghin/Dieter Planck (Hrsg.), *Menschen, Zeiten, Räume – Archäologie in Deutschland*, Stuttgart 2002, 331 Abb. 2, die Rekonstruktion nach Uta v. Freeden, „Reich der Franken – eine Grundlage Europas“, in: Uta v. Freeden/Siegmar v. Schnurbein (Hrsg.), *Spuren der Jahrtausende. Archäologie und Geschichte in Deutschland*, Stuttgart 2002, 333 Abb. 580; 8: Entwurf Th. Kind unter Verwendung der Angaben bei Böhme 1999, Pascal Rohmer, „Le moulin carolingien d'Audun-le-Tiche“, in: *L'Archéologique*, no. 22, Juin 1996 (1996), S. 6-8, Karine Berthier/Paul Benoît, „Les moulins hydrauliques de l'Antiquité à la fin du Moyen Age en France d'apres les données archéologiques“, in: *Zeitschrift für Archäologie des Mittelalters* 31, 2003 (2004), S. 3-9, Philip Rahtz/Robert Meeson, „An Anglo-Saxon Watermill at Tamworth. Excavations in the Bolebridge Street area of Tamworth, Staffordshire, in 1971 and 1978“, *Council for British Archaeology, Research Report* 83, London 1992, Axel Steensberg, „The horizontal water mill. A contribution to its early history“, in: *Prace i Materiały Muzeum archeologicznego i etnograficznego w Łodzi. Seria Archeologiczna* 25, 1978 (1979), S. 345-356, Hartwig Löhr/Mechthild Neyses, „Späteiszeitliche bis mittelalterliche Ablagerungen im Alfbachtal zwischen Udler und Saxler (Kreis Daun) und ihre dendrochronologische Datierung“, in: *Funde und Ausgrabungen im Bezirk Trier* 29, 1997, S. 51-66, Petra Tutlies, „Überraschungsfund: Frühester Nachweis einer karolingischen Wassermühle im Rheinland“, in: *Archäologie in Deutschland* 2005, f. 5, S. 4 und einem mündlichen Hinweis von Jörn Schuster, Salisbury; 9: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: VMF Inv.-Nr. I AE 97, Nr. 2: VMF Inv.-Nr. I AE 96, Nr. 3: VMF Inv.-Nr. I AE 88, Nr. 4: VMF Inv.-Nr. I AE 67, Nr. 5: VMF Inv.-Nr. I AE 111, Nr. 6: VMF Inv.-Nr. I AE 49-418, Nr. 7: VMF Inv.-Nr. I AE 49-417, Nr. 8: VMF Inv.-Nr. I AE 87, Nr. 9: VMF Inv.-Nr. I AE 93, Nr. 10: VMF Inv.-Nr. I AE 49-419, Nr. 11: VMF Inv.-Nr. I AE 30, Nr. 12: VMF Inv.-Nr. I AE 49-344, Nr. 13: VMF Inv.-Nr. I AE 49-318; 10: Zeichnungen: A. Ehrlich; Bildmontage Th. Kind. Nr. 1: VMF Inv.-Nr. I AE 68, Nr. 2: VMF Inv.-Nr. I AE 171, Nr. 3: VMF Inv.-Nr. I AE 172, Nr. 4: VMF Inv.-Nr. I AE 70, Nr. 5: VMF Inv.-Nr. I AE 174, Nr. 6: VMF Inv.-Nr. I AE 173, Nr. 7: VMF Inv.-Nr. I AE 49-77, Nr. 8: VMF Inv.-Nr. I AE 49-155, Nr. 9: VMF Inv.-Nr. I AE 181, Nr. 10: VMF Inv.-Nr. I AE 160, Nr. 11: VMF Inv.-Nr. I AE 175, Nr. 12: VMF Inv.-Nr. I AE 176, Nr. 13: VMF Inv.-Nr. I AE 224, Nr. 14: VMF Inv.-Nr. I AE 72; 11: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: VMF Inv.-Nr. I AE 34, Nr. 2: VMF Inv.-Nr. I AE 29, Nr. 3: VMF Inv.-Nr. I AE 33, Nr. 4: VMF Inv.-Nr. I AE 71, Nr. 5: VMF Inv.-Nr. I AE 94, Nr. 6: VMF Inv.-Nr. I AE 205, Nr. 7: VMF Inv.-Nr. I AE 17, Nr. 8: VMF Inv.-Nr. I AE 21, Nr. 9: VMF Inv.-Nr. I AE 209, Nr. 10: VMF Inv.-Nr. I AE 37, Nr. 11: VMF Inv.-Nr. I AE 38, Nr. 12: VMF Inv.-Nr. I AE 213, Nr. 13: VMF Inv.-Nr. I AE 104, Nr. 14: VMF Inv.-Nr. I AE 206, Nr. 15: VMF Inv.-Nr. I AE 177, Nr. 16: VMF Inv.-Nr. I AE 49-441, Nr. 17: VMF Inv.-Nr. I AE 49-437, Nr. 18: VMF Inv.-Nr. I AE 241, Nr. 19: VMF Inv.-Nr. I AE 49-442, Nr. 20: VMF Inv.-Nr. I AE 49-440, Nr. 21: VMF Inv.-Nr. I AE 49-438, Nr. 22: VMF Inv.-Nr. I AE 201, Nr. 23: VMF Inv.-Nr. I AE 99, Nr. 24: VMF Inv.-Nr. I AE 243; 12: Zeichnungen: A. Ehrlich; Bildmontage: Th. Kind. Nr. 1: VMF Inv.-Nr. I AE 14/2, Nr. 2: VMF Inv.-Nr. I AE 22/2, Nr. 3: VMF Inv.-Nr. I AE 210, Nr. 4: VMF Inv.-Nr. I AE 202, Nr. 5: VMF Inv.-Nr. I AE 69, Nr. 6: VMF Inv.-Nr. I AE 27, Nr. 7: VMF Inv.-Nr. I AE 19; 13: Entwurf: Th. Kind unter Verwendung der Angaben bei Steppuhn 1998, 106-110 Tab. 7 Abb. 28, Stephan 1994, Wedepohl 2003, 125-132, Wedepohl 2003a, 85-88, Mitchell 1996, Eleonora Tabaczyńska, „L'Officina vetraria“, „Oggetti vari“, in: Lech Leciejewicz/Eleonora Tabaczyńska/Stanisław Tabaczyński (Hrsg.), *Torcello, scavi 1961-62. Istituto nazionale d'Archeologia e storia dell'Arte*,

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Macháček
1: after Staňa 1985; 2: after Goláň/Macháček 2004; 3, 5, 7-9, 11-14: author; 4: reconstruction after Dostál 1975; drawn by Oto Šik; 6: after Dostál 1979; *idem* 1984; 10: after Andrews 1997; 15: after McCormick 2001;
Pls 22-23: author; Pl. 24: after R. Křivánek, AÚ AV ČR Praha

Macphail/Crowther/Cruise
Pls 20-21: authors

McCormick
1: author

Meiborg
1-13, 15: author; 14: after Görich 1980, 117

Olmo Enciso
1-8: author

Périn/Calligaro/Vallet/Poirot/Bagault
1: authors; 2: after H. L. Levin 1988;
Pls 5-6: authors

Poláček
1: after Kučerovská 1998; 2: after Szameit 1995 (A), Marešová 1983 (B) and Hrubý 1955 (C), unpublished (D); 3: after Kučerovská 1989; 4: after Marešová 1976; 5: after Staňa 1961 (A), Kouřil 1994 (B) and Galuška 2003 (C); 6: drawing by M. Cimflová; 7: after Himmelová 1995; 8-9: photograph by J. Škvařil; 10-12: drawing by O. Marek; 13: drawing by R. Skopal

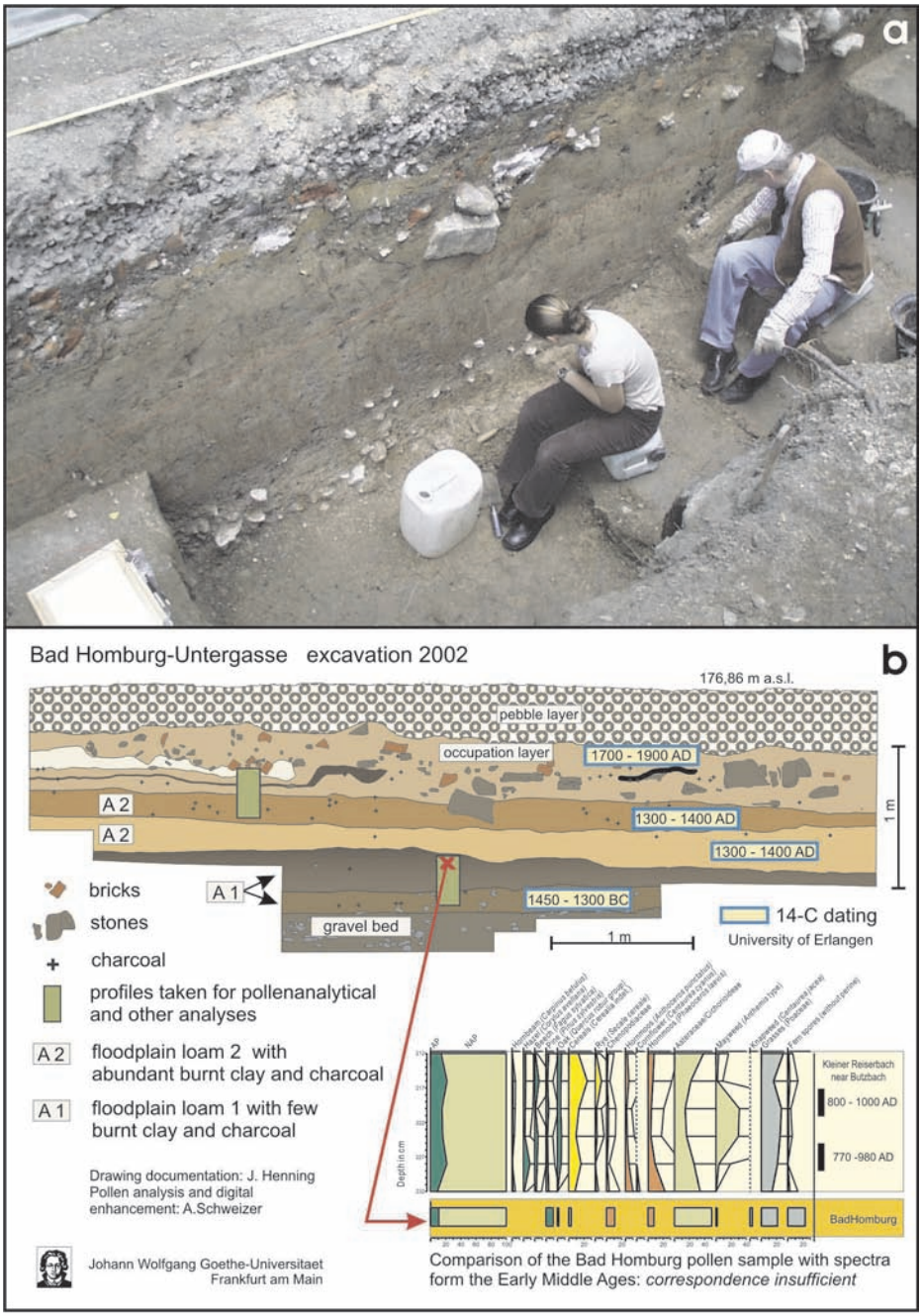
Szőke
1, 3-5: author; 2a: Wien, Kriegsarchiv; 2b, 7: after Sós 1969; 6: after Radnóti 1948; 8. after Müller 1995

Tereygeol
1-4: author

Theuws
1-6: author

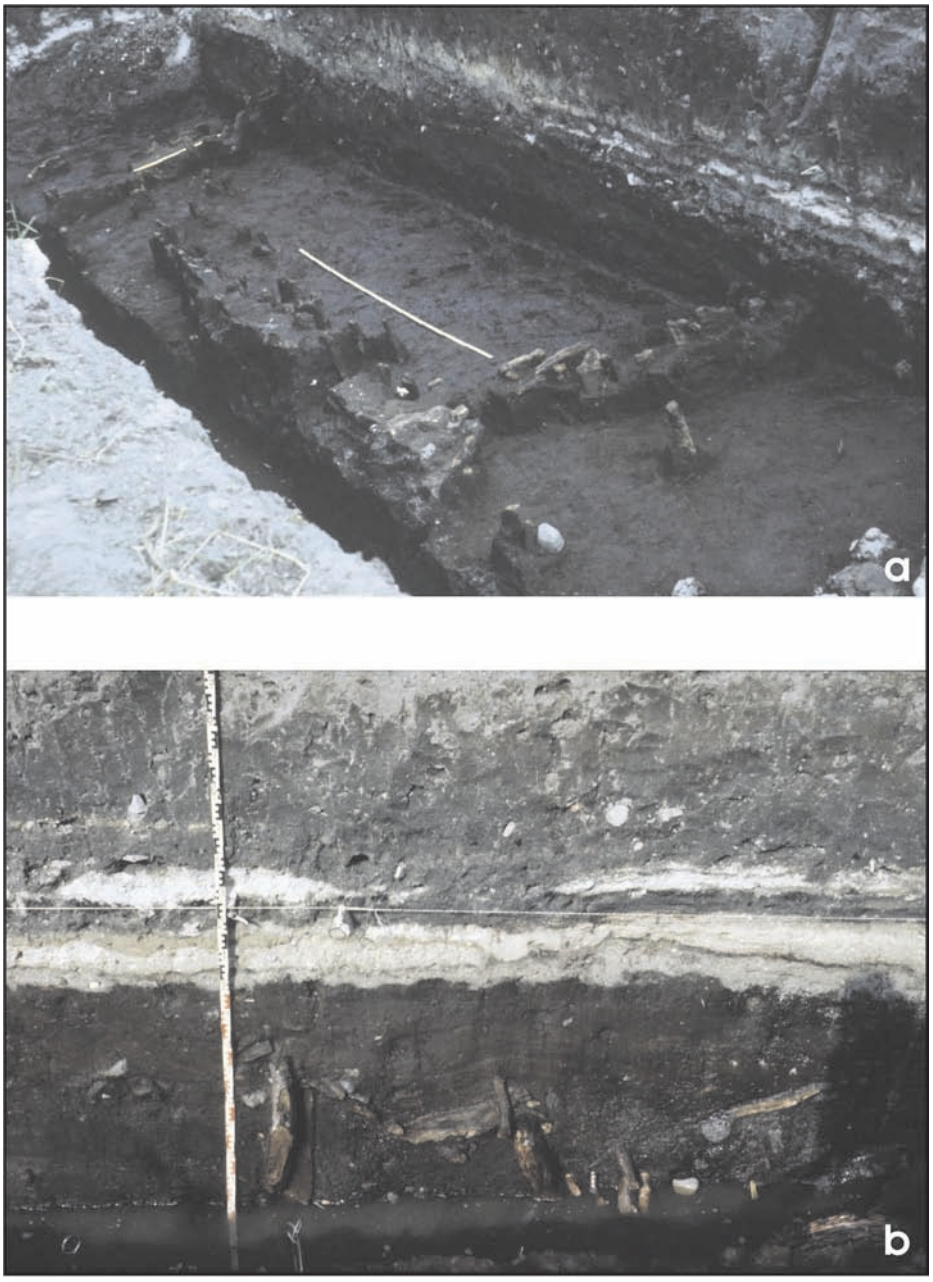
Wamers
1, 6: Institut für Stadtgeschichte Frankfurt am Main; 2: after Schwind 1984; 3: Historisches Museum Frankfurt am Main; 4: after Wamers 2001; 5: after Ellmers 1984; 7: based on Schwind's plan of 1984

Weber
1-5, 7-17: author; 6. after Merchand (Ed.) 1993, 86

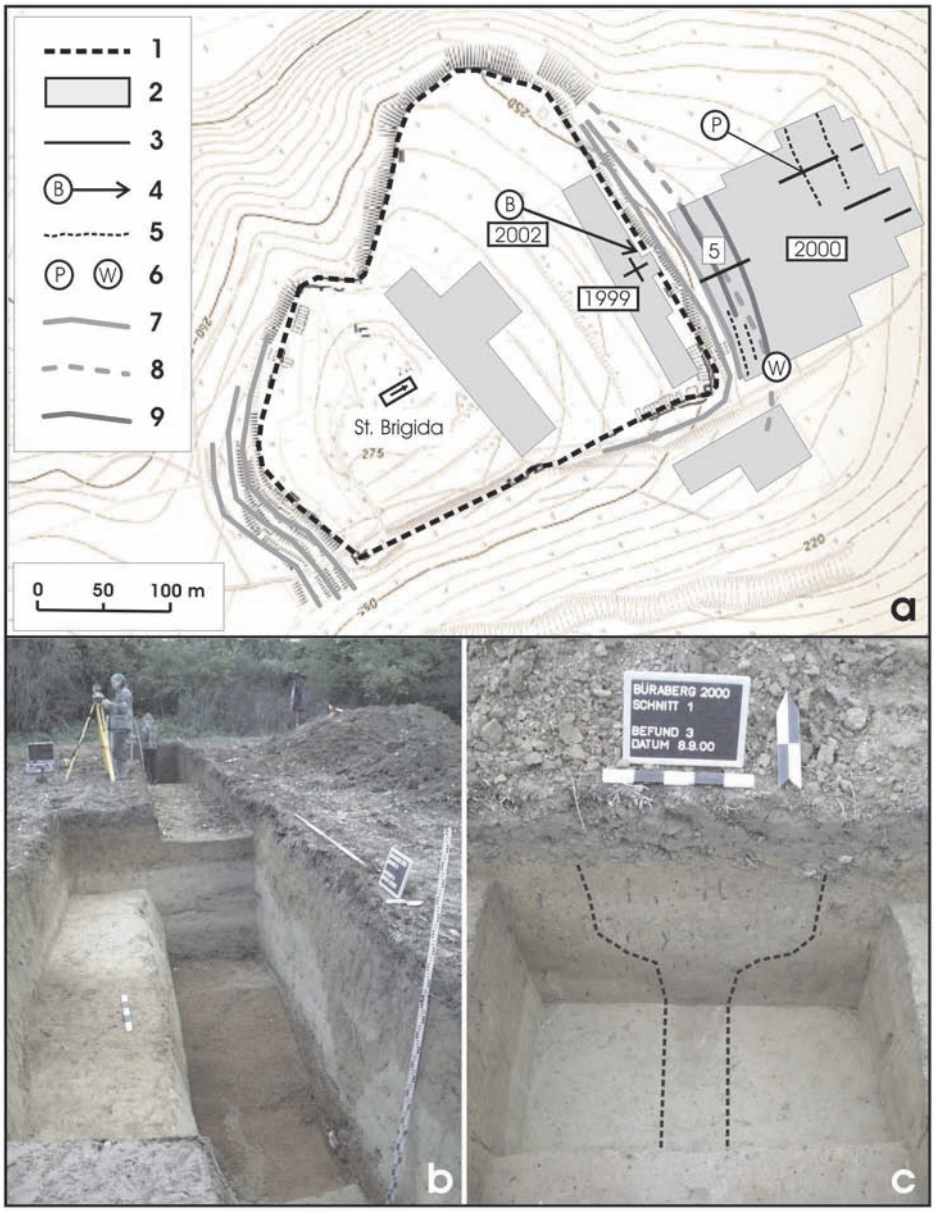


(a) Excavation trench in Bad Homburg "Untergasse" and (b) profile documentation with results of radiocarbon dating and pollen analysis

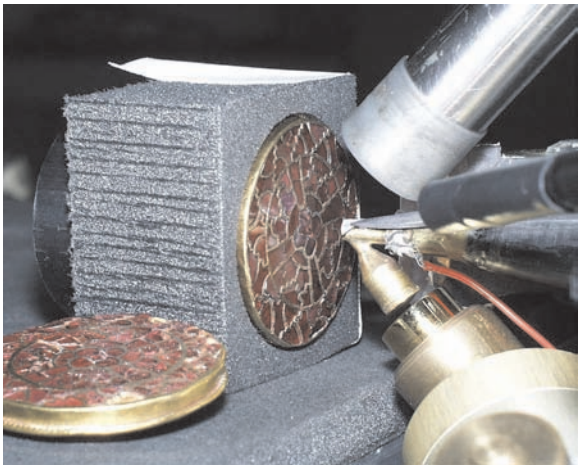
Iron finds (c. AD 500) from the Alemannic hilltop settlement of Bad Urach "Runder Berg", Baden-Wuerttemberg; (8) scythe from the iron hoard of 1987; (1-7, 9-23) contents of an iron hoard (detector find 1993): (1) shield boss, (2-3) arrow heads, (4-5) axes, (6) sharpening (?) hammer, (7) cuff ring of a scythe (?), (9) whetstone, (10-11) borers, (12) plane blade, (13-14) sickles, (15) weaving sword, (16-17) ploughshares, (19) file (?), (18, 20-21) various iron pieces, (22-23) bucket straps



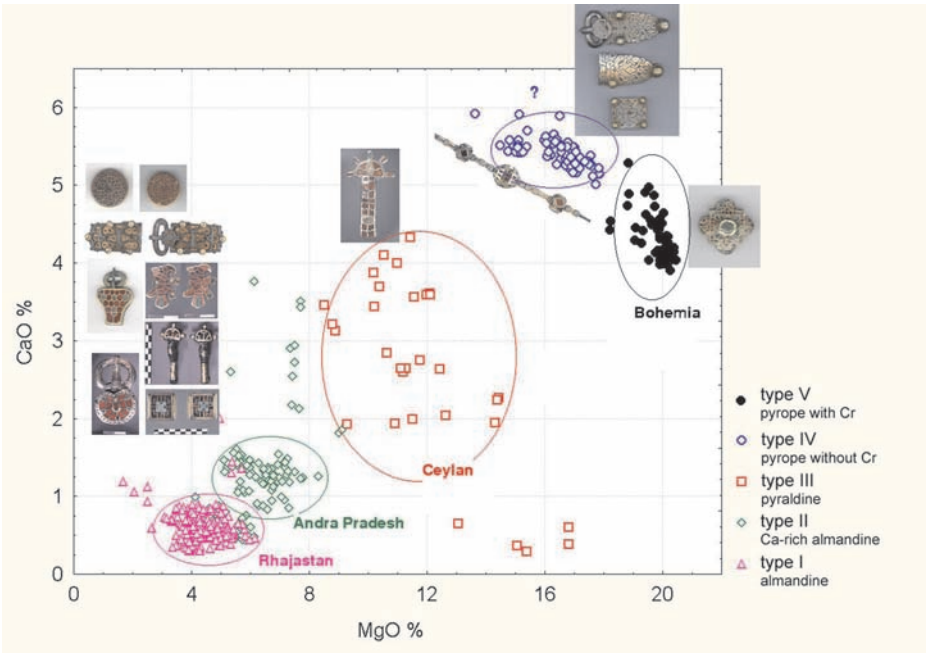
Ralswiek on the island of Ruegen at the Baltic sea, 9th century trading place, western landing area, excavations 1977: Post-and-wattle house (a), which was connected with a small landing stage (b) in a later occupation phase. With falling sea level in the later early medieval ages the area first moored and then silted up (see the light layers of sand in the profile)



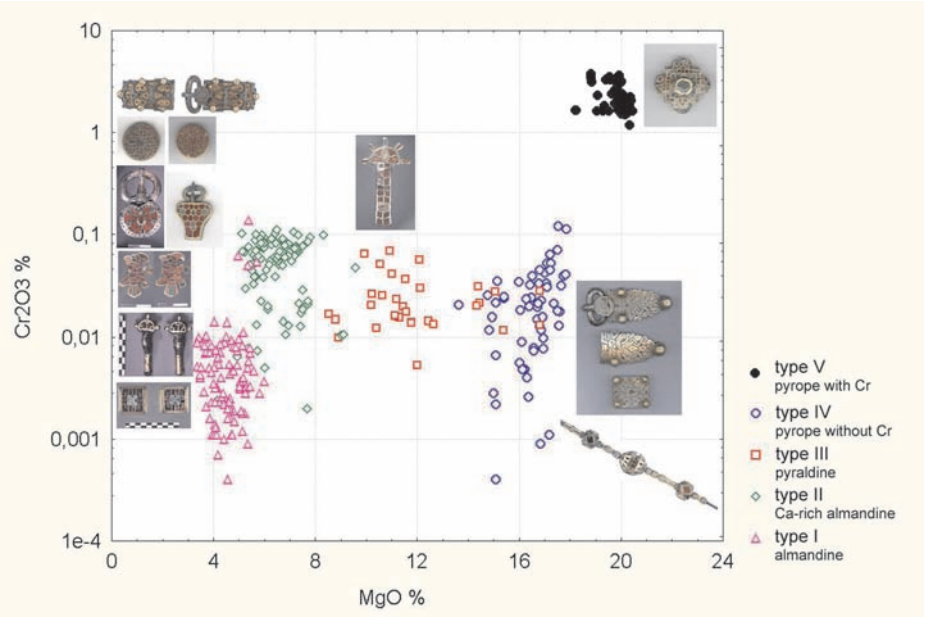
The Carolingian times oppidum at the Bueraberg near Fritzlar: (a) Archaeological field activities 1999-2002, key: 1 – stone fortification wall, 2 – areas of geophysical prospecting, 3 – trial trenches, 4 – soil micromorphological investigation (R. Macphail), 5 – geophysically detected palisade lines, 6 – spezial findings: P – archaeological verification of the palisade ditch, W – excavation N. Wand 1973, 7 – v-shaped fortification ditches (N. Wand), 8 – supposed v-shaped fortification ditch after N. Wand (revised 2000), 9 – approved ditches; (b) section profile with v-shaped ditch; (c) palisade ditch



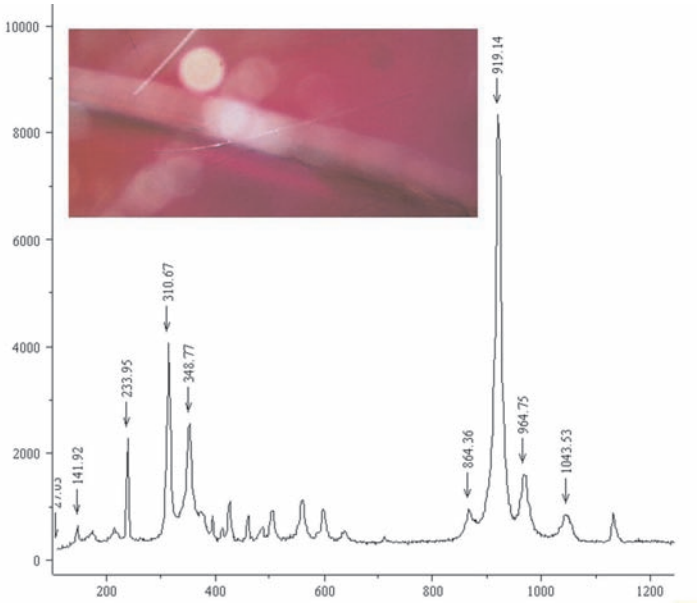
1. Brooch of the Frankish queen Aregonde with garnets set in “cloisonné” style placed in the external beam of the AGLAE accelerator



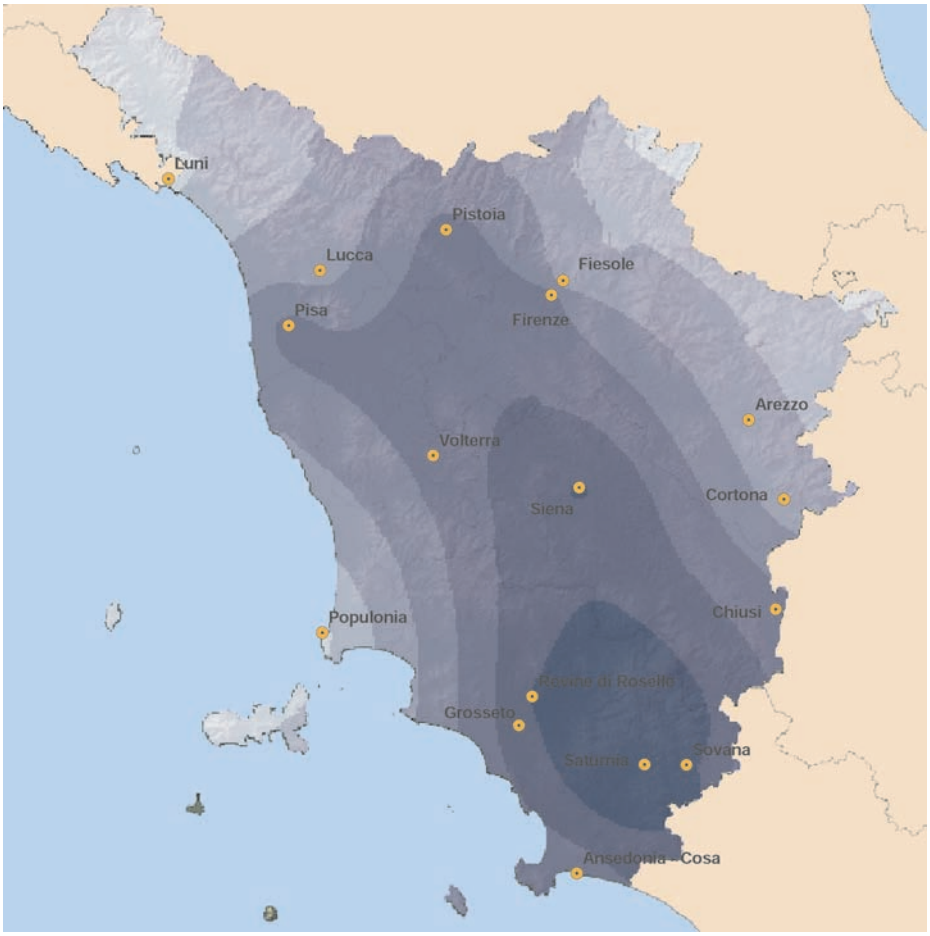
2. The CaO vs MgO plot shows that the Merovingian garnets cluster five types corresponding to different sources: type I and type II are almandines from India, type III are pyraldines from Ceylon and type IV and type V correspond to pyropes likely originating from Europe



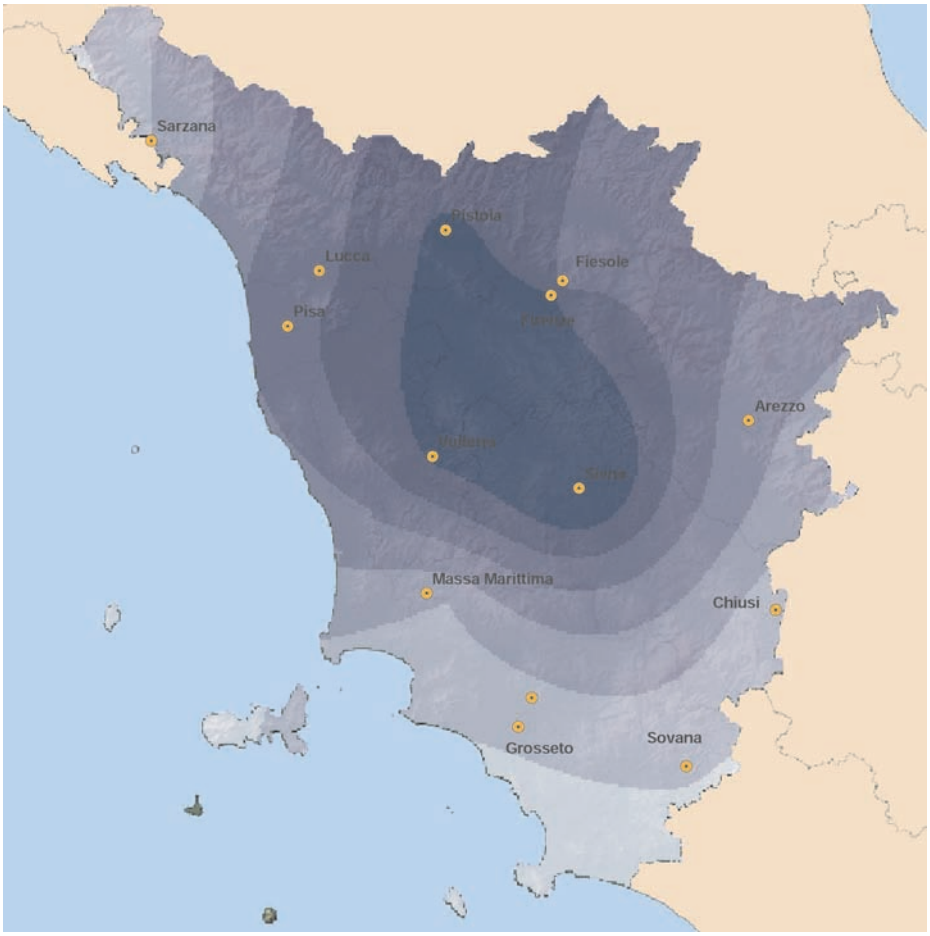
1. The Cr2O3 vs MgO plot confirms the use of five garnet sources. The high chromium content of type V is typical for East European garnets (Bohemian deposits)



2. Raman spectrum of a sillimanite inclusion, indicating a high grade metamorphism, which is characteristic of Precambrian rocks



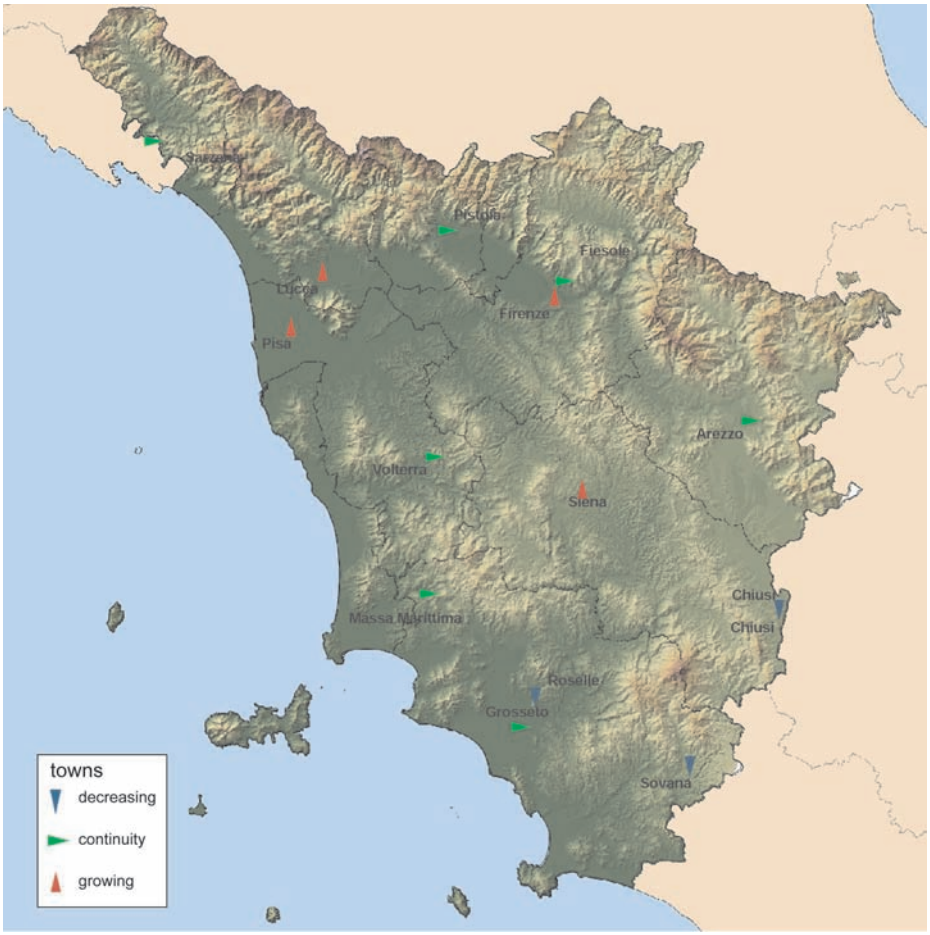
Macro transformations of the surface pattern of the towns in Tuscany: Starting point in the third century



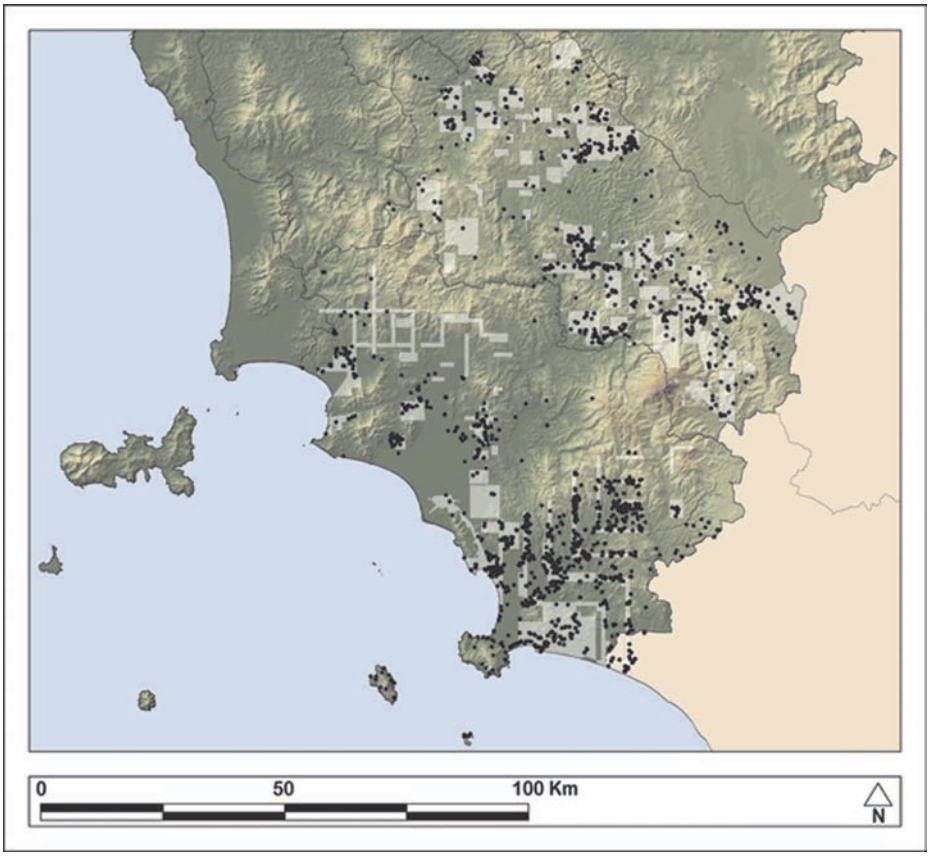
Macro transformations of the surface pattern of the towns in Tuscany: Situation in the twelfth century. The settlement system suffered a remarkable displacement from south to northwest with a consistent shift of the towns' barycentre

Distribution of the towns during the third century: the map illustrates a substantial stability. Although in that period cities in southern Tuscany began to experience a progressive process of material decline

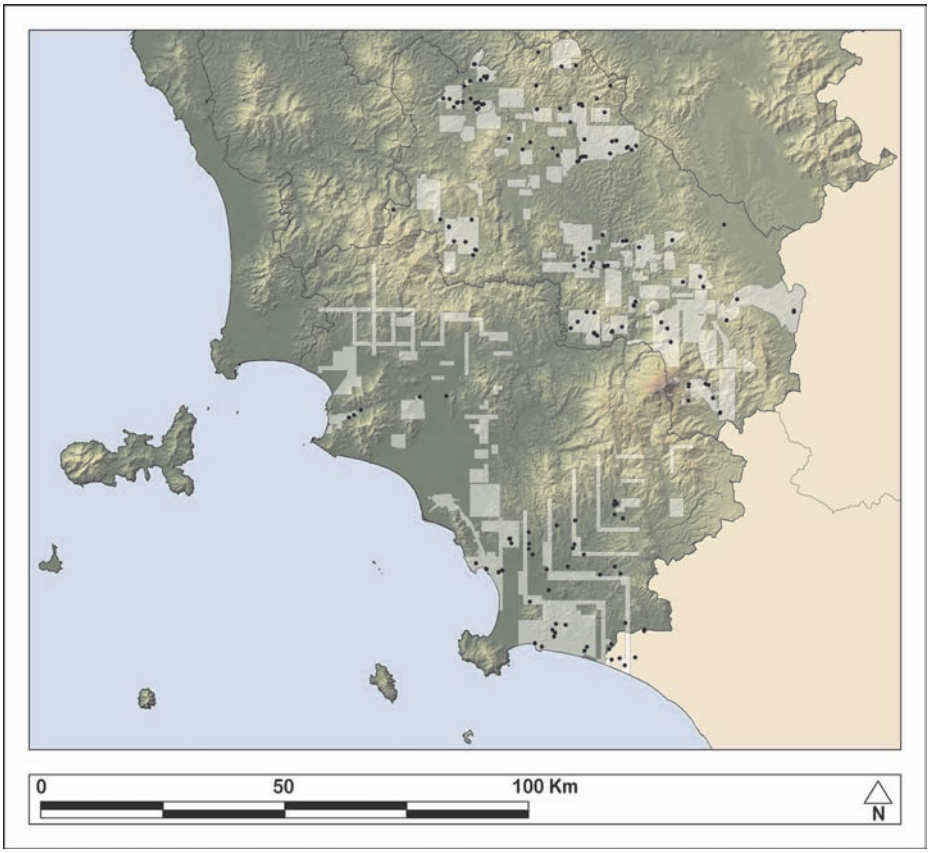
Distribution of towns during the fifth and sixth centuries. A substantial extension of the decline of towns is documented by archaeological record; not only Saturnia loses its role of centre town, but also Roselle, Sovana, Chiusi, Arezzo, Volterra, and Populonia experience a deep phase of urban decay. At the same time, Lucca and Siena seem to experience a phase of development



Distribution of towns during the ninth and tenth centuries: at some stage in the transition to the ninth-tenth centuries, town-status of Ansedonia-Cosa, Populonia, and Roselle comes to an end. Instead, Grosseto and Massa Marittima rise as new centres. On the contrary, a growing trend seems to invest the north-western area: Pisa, Lucca, Firenze, and Siena. A progressive and deeper regression seems to affect the southern area



Distribution of rural settlements in Central and South Tuscany. First-fourth centuries: average of one site per 1.27 km²



Distribution of rural settlements in central and south Tuscany, sixth and seventh centuries: the density drops to one site per 10 km²

Montemassi (Roccastra - Grosseto). The castle is documented from 1076; the excavations have shown a first occupation in the Carolingian period

1. The castle of Montarrenti (Sovicille - Siena) is documented from the mid-twelfth century. Excavations have demonstrated that the settlement began with a group of huts between the mid-seventh and the mid-eighth centuries

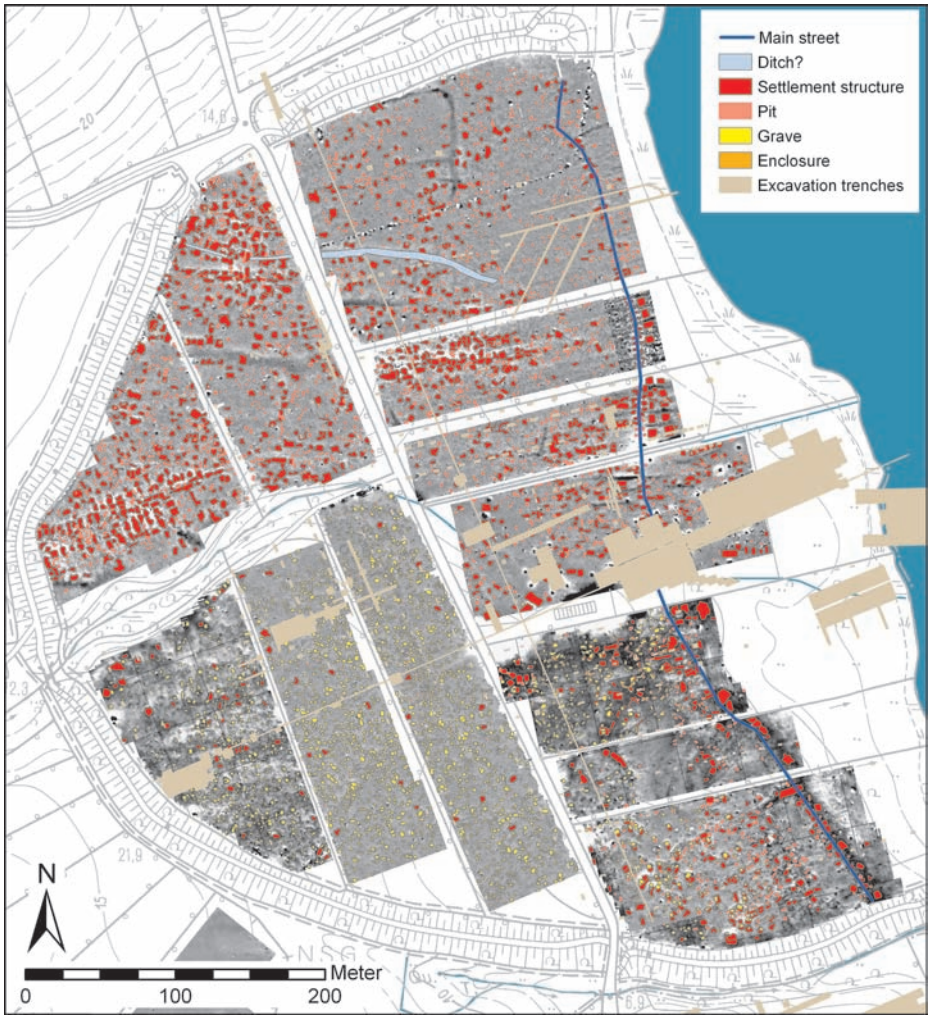
2. Montarrenti (Sovicille - Siena) may have had two defensive palisades to fortify the slope‘s lower and upper edges. Between the mid-eighth and ninth century the upper zone was transformed: the timber palisade was replaced by a stone and mortar wall, and the dwellings were replaced by a large wooden, rectangular store

1. Rocca di Scarlino (Scarlino - Grosseto): a first village, born in the half of the sixth century, was transformed by a plan reorganisation between the end of the ninth century and throughout the tenth century; it was bounded by an enclosure, people lived in buildings of mixed construction and a frescoed church was built

2. Poggibonsi (Siena) is am imposing castle, situated along the Via Francigena between Florence and Siena. It appears in archive records from the mid-twelfth century. Extensive archaeological investigations have documented a first occupational phase in the late antique period and subsequently a large setllement of wooden dwellings grows during the seventh and eighth centuries

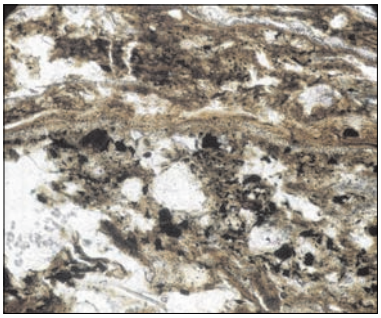
1. Poggibónsi (Siena): the plan of the settlement was transformed from the mid-eighth to the early ninth centuries; the settlement was reorganised in a curtis

2. Donoratico (Livorno): the impressive and monumental remains of the castle of Donoratico are superimposed to a late antique settlement

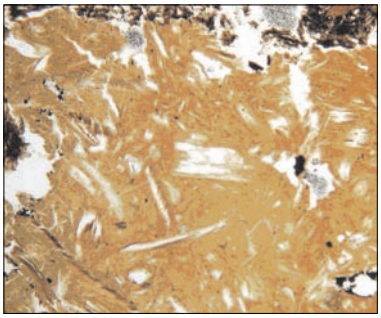


Haithabu: Simplified interpretation of the magnetic anomalies (based on surveying by the teams from Vienna and Munich)

Artist's impression of Hamwic



a



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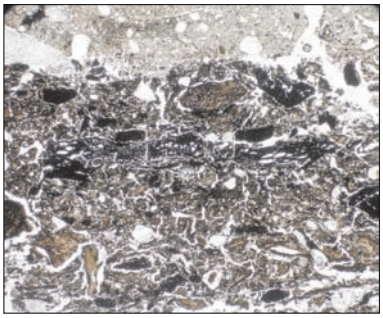

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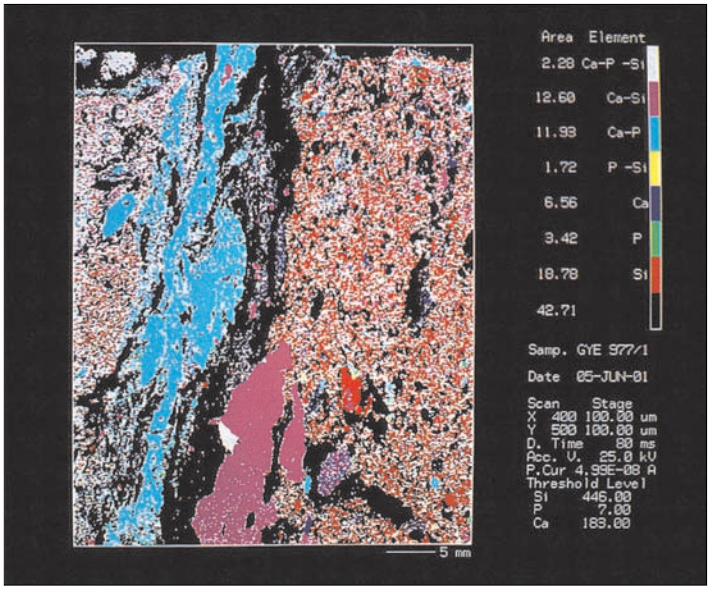
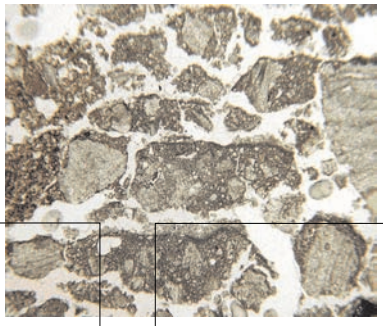


d

Examples of soil micromorphology and microprobe from early medieval London Guildhall.

a



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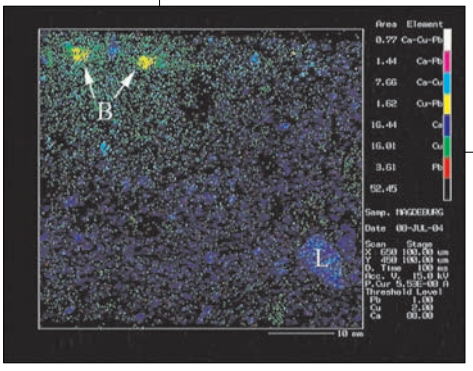

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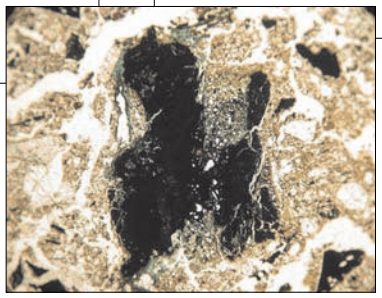

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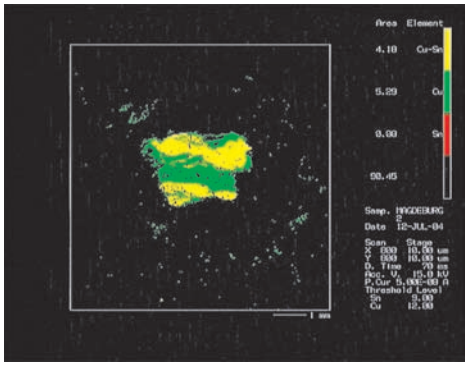

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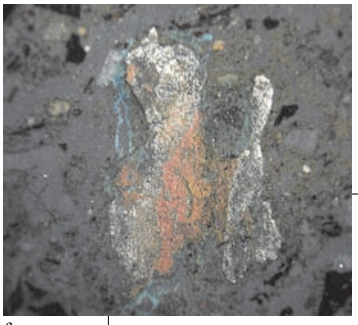
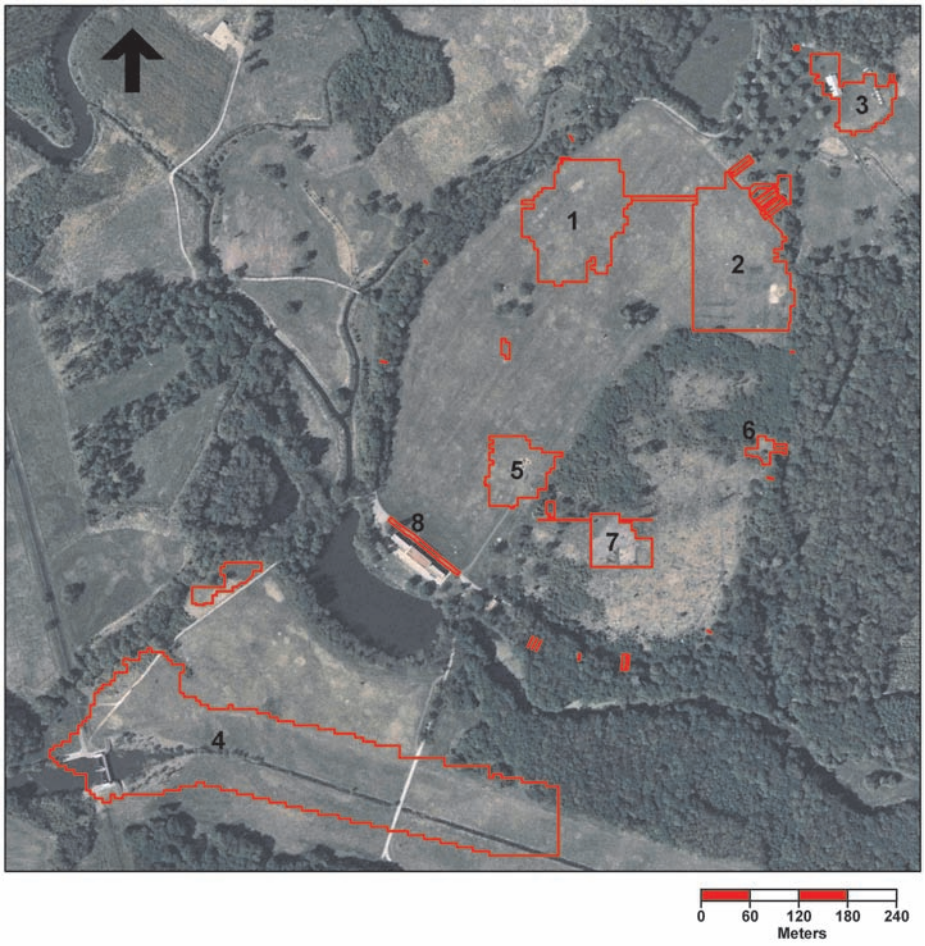
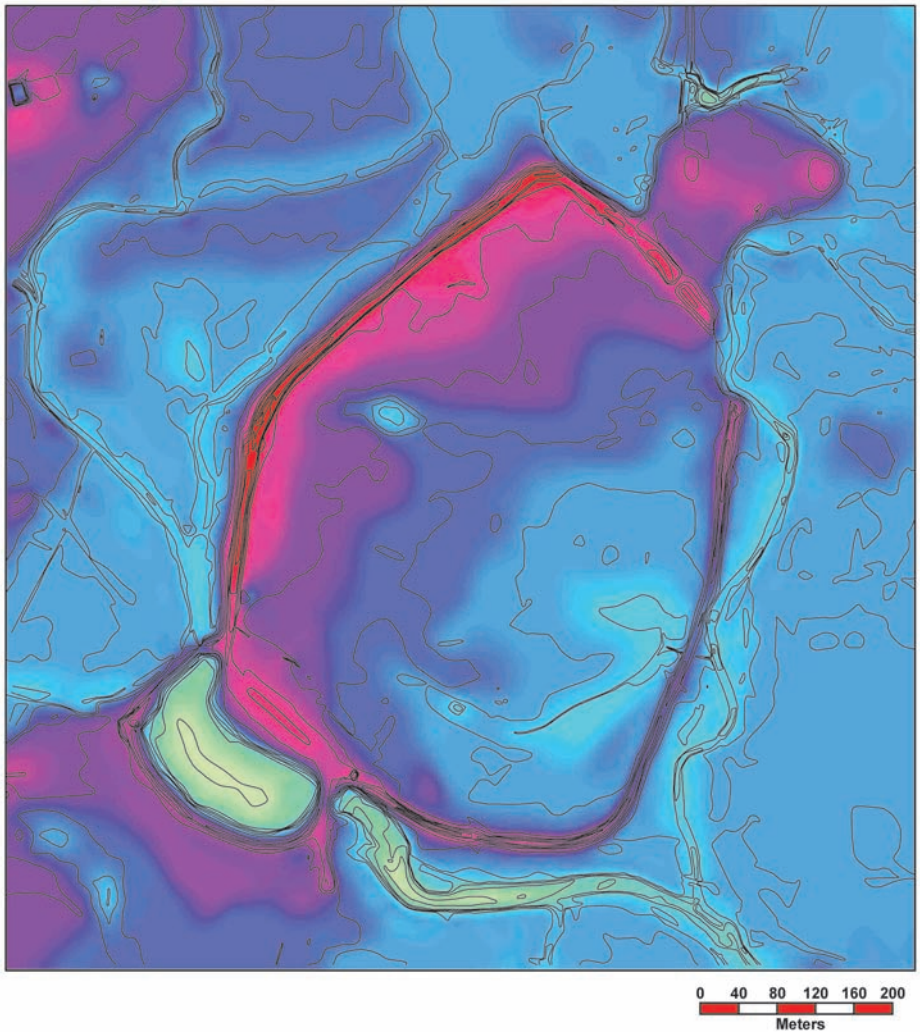


f

Examples of soil micromorphology and microprobe from early medieval Magdeburg



Pohansko near Břeclav. Investigated areas 1958-2000. 1: Court of a magnate; 2: Forest nursery (so-called craftsmen‘s precinct); 3: Northwest bailey; 4: Southern bailey; 5: Cremation burial ground; 6: E Gate; 7: Forest sand-dune; 8: Lichtenstein castle



Digital elevation model of Pohansko. Red – highest area, Yellow-green – lowest area

Geophysical measurements in Pohansko